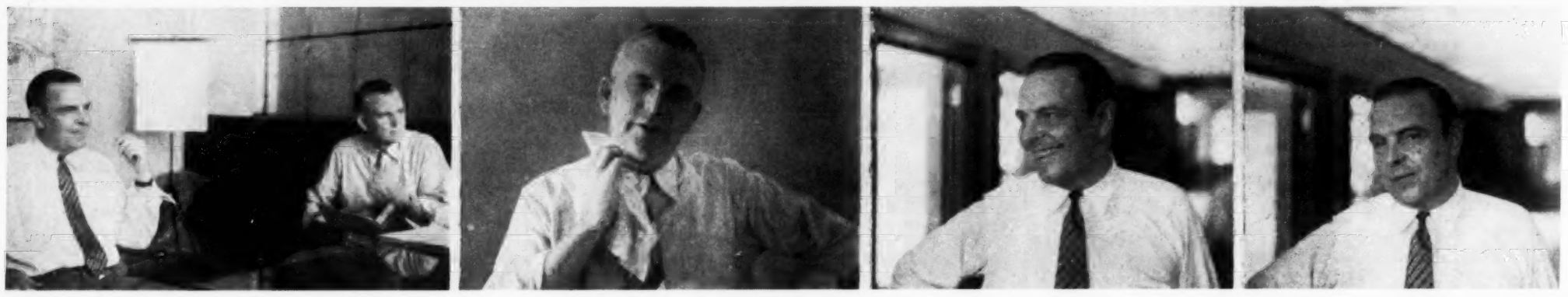
New Bendix Home Appliance Field Men Get Their Orders at Headquarters



Under the direction of Judson Sayre, Bendix factory representatives are now getting into the field to build up a distributing organization for the Bendix home laundry. Getting their orders at the plant are (1) Gerald Hulett, Pacific Coast, and William DeWitt, central states. (2) "This line is hot," says De Witt. (3 and 4) Hulett, before-and-after something-or-other.

Safety Congress Lists Six Speakers on Refrigeration

KANSAS CITY — Six speakers scheduled on the program of the refrigeration section of the twenty-sixth National Safety Congress and Exposition, to be held in the air-conditioned Municipal Auditorium here Oct. 11 to 15, were announced recently.

At the first session Oct. 11, Dr. J. C. Goosmann, Carbonic Engineering, Inc., New York City, will talk on "Accidents Involving Carbon Dioxide and Their Prevention"; A. A. Rall, safety director, Kansas City Power & Light Co., will discuss "The Mental Causes of Accidents"; "The Human Element in Accident Prevention (Refrigeration)" will be the subject of H. L. Lincoln, general plant manager, Union Ice Co., San Francisco.

E. H. Heckel, vice president of the Carrier Corp., has chosen "Safety Control in Air Conditioning" for his address Oct. 13.

Other speakers and their subjects at the Oct. 13 session will include:

G. L. Gore, chief safety engineer, Bruce Dodson & Co., Kansas City, "Accidents in Delivering Refrigerated Products and Their Prevention"; and Dr. J. R. Garner, chief surgeon, Atlanta & West Point Railroad Co. "Fatigue and its Relation to Accident Prevention."

General chairman of the refrigeration section is Harold M. Toombs, Armour & Co., Chicago. Other officers are C. H. Harper, Southern United Ice Co., Jackson, Miss., vice chairman; Emerson A. Brandt, National Association of Ice Industries, Chicago, program chairman; and John L. Speers, The City Ice & Fuel Co., Cleveland, secretary.

ANY TIME

ANY WHERE

You're always near a source of

Artic

REG. U. S. PAT. OFF.

(DU PONT METHYL CHLORIDE)

Prompt delivery in 20-, 60-, 90-, or 130-lb. cylinders from adequate stocks in principal cities.

DU PONT

E. I. Du Pont de Nemours & Co., Inc.
THE R. & H. CHEMICALS DEPT.
Wilmington, Delaware

ARTIC—*the preferred Methyl Chloride for Service Work*

Electrical Leagues to Hold International Meeting Oct. 6

NEW YORK CITY—Second annual conference of International Association of Electrical Leagues is scheduled to be held Oct. 6 and 7 in the auditorium of Electrical and Gas Association of New York.

First day and morning of the second day will be open sessions to which all branches of the electrical industry are invited.

The regular monthly meeting of the New York Association has been scheduled for Oct. 6 at the Astor hotel as a special feature of the conference activities. Speaker of the day will be Floyd L. Carlisle, chairman of the boards of Consolidated Edison Co. of New York, and of Niagara Hudson Power Corp. Mr. Carlisle will speak on: "The interdependence of the various branches of the electrical industry and the necessity for full cooperation among them."

Following are some of the topics listed for the conference and the speakers who will discuss them:

National kitchen modernization activity—G. E. Whitwell, vice president, Philadelphia Electric Co.; chairman, National Kitchen Modernizing Bureau.

Electrical housewares program—C. E. Swartzbaugh, president, Swartzbaugh Mfg. Co.; member, electrical housewares committee.

Adequate wiring—M. E. Skinner, vice president, Buffalo Niagara & Eastern Power Co.; member, executive committee, National Adequate Wiring Bureau.

Cooperative dealer merchandising in metropolitan New York area— E. F. Jeffe, vice president, Consolidated Edison Co. of New York.

Air-conditioning promotion: E. J. Heggarty, advertising and sales promotion manager, Standard Air Conditioning, Inc.

Range promotion—G. J. Reichert, merchandise manager, Buffalo Niagara Power Co.

Radio promotion — Harry B. Brown, national merchandising manager, Philco Radio & Television Corp.

Laundry equipment promotion—J. M. Michel, eastern division manager, Apex-Rotarex Corp.

Sales financing plans—Roger Steffan, vice president, National City Bank.

Speakers on electric water heating and commercial electric cooking promotion will be announced later.

Haller Host to Cincinnati & Dayton Kelvinator Dealers

CINCINNATI — Carl E. Haller, merchandising manager of Graybar Electric Co., distributor, recently was host to Kelvinator dealers and salesmen of the Cincinnati-Dayton district at a dinner meeting at the Hotel Gibson roof garden.

Saunders Heads Eastern Sales for Kelvinator

NEW YORK CITY — Keith L. Saunders, formerly household sales manager for the Frigidaire Corp. of New York, Inc., has resigned his position to join the Nash-Kelvinator Corp. as eastern regional manager with headquarters here.

Mr. Saunders succeeds J. F. Crossin who has been appointed manager of Kelvinator's central region, with headquarters in Detroit.

William H. Reeves, formerly assistant to Mr. Saunders in the Frigidaire New York offices, has succeeded him. E. C. Duhamel, formerly district representative in New York for Frigidaire has been appointed assistant to Mr. Reeves.

Silliman to Direct Sales Of Detrola Appliances

(Concluded from Page 1, Column 4)

and dealers will be built up to handle the company's refrigerators and radios.

First step in this expansion is the appointment of four new Detrola distributors: Elliott-Lewis Electrical Co., Philadelphia; Emmons-Hawkins Hardware Co., Huntington, W. Va.; Refrigeration and Appliance Corp., Cleveland; and Sanford Samuel Corp., New York City.

Mr. Silliman came to the Detrola Corp. from United American Bosch Corp., Springfield, Mass., where he was eastern zone manager.

Anaconda Copper

REFRIGERATION TUBES

They Flare without cracking

ANACONDA THE AMERICAN BRASS CO.

FRENCH SMALL TUBE Branch

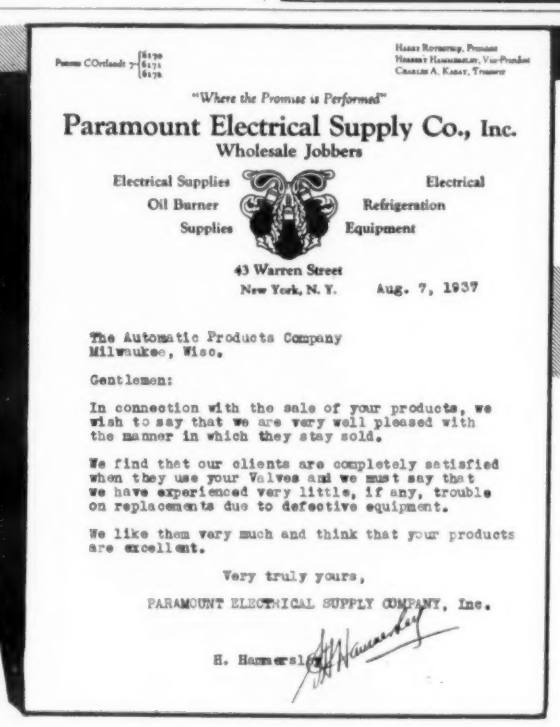
General Offices: Waterbury, Conn.

From Paramount . . . .

"Where the Promise is Performed"

We Add:

"With the Help of A-P Controls"



"Where the Promise is Performed"

Paramount Electrical Supply Co., Inc.

Wholesale Jobbers

Electrical Supplies — Oil Burner Supplies — Electrical Refrigeration Equipment

43 Warren Street
New York, N. Y. Aug. 7, 1937

The Automatic Products Company
Milwaukee, Wisc.

Gentlemen:

In connection with the sale of your products, we wish to say that we are very well pleased with the manner in which they stay sold.

We find that our clients are completely satisfied when they use your Valves and we must say that we have experienced very little, if any, trouble on replacements due to defective equipment.

We like them very much and think that your products are excellent.

Very truly yours,

PARAMOUNT ELECTRICAL SUPPLY COMPANY, Inc.

H. Hammersley

Go to Your Jobber For Your A-P Controls

All Supply Jobbers and Engineers—like Mr. Hammersley of Paramount Electrical Supply Company—have a "Promise to Perform"—a promise couched in terms of efficient, economical, dependable service of every item in their many installations.

A-P engineers, too, build with pride into each A-P Product the "Performance Promise" that always means well-satisfied clients. A-P Controls are the result of that rare combination, the finest materials, alert engineering design, skilled craftsmanship, and painstaking tests and inspections. A-P Expansion Valves, Refrigeration and Air Conditioning Solenoids come to you prepared for the responsibility of "Satisfied Service" on your job. They stay sold.

Progressive Jobbers Everywhere Stock A-P Controls

AUTOMATIC PRODUCTS COMPANY

2450 NORTH THIRTY — SECOND STREET

MILWAUKEE WISCONSIN

The Distributor Who Sells the

Copeland REFRIGERATION LINE

IS BUILDING GOOD-WILL FOR YEARS TO COME!

It is just good business foresight to sell your customers a quality-built Copeland product. Whether you sell a Copeland Household Refrigerator, Commercial Refrigeration, Washer or Ironer, you are wisely building up a backlog of long-time customer satisfaction that will pay you dividends in continued patronage for many years.

Write for Sales Plan

COPELAND REFRIGERATION CORPORATION

Holden Ave. at Lincoln — Detroit

THE NEWSPAPER OF THE INDUSTRY

AIR CONDITIONING AND REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Trade Mark Registered U. S. Patent Office. Established 1926 as Electric Refrigeration News
Member Audit Bureau of Circulations. Member Associated Business Papers.

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Sub-Committee To Hear Chicago Code Complaints

Council Decides Problem Can't be Settled at One Session

CHICAGO—Further public hearings on Chicago's proposed ordinance governing refrigeration and air-conditioning systems were referred to a sub-committee of the City Council's Committee on Health, after a brief session Sept. 16 at which statements by 10 business and industrial groups convinced Alderman Thomas J. Terrell, chairman of the health committee, that the code problem was too involved to be handled comprehensively at one sitting.

Alderman Michael F. Mulcahy is chairman of the sub-committee, which has been delegated to hold as many hearings as are necessary for adequate consideration of all points brought up for discussion.

As reported in the Sept. 8 issue of the NEWS, the ordinance originally was passed by the City Council, but later was referred to the Committee on Health for public hearing after several organizations, led by the Cook County Retail Council, had entered objections to its enactment.

In addition to the Retail Council, the following organizations were represented at the Sept. 16 hearing:

National Electric Manufacturers Association, Chicago Residential Hotel Association, Chicago Steamfitters Union, Master Steamfitters Association, the Palmer House and other hotels, the State Street Council, Chicago Retail Druggists Association, Chicago Ice Cream Institute, and the Cook County Regional Council's installation and service group.

Gerald Gearon, supervising mechanical engineer of the Department for the Inspection of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants, which supervised drafting of the code and is responsible for its enforcement, said at the hearing that he believed the Retail Council's objections to the ordinance arose from misinterpretation of some of its provisions.

Spokesman for the Retail Council said that its objections would be stated at a future hearing. A representative of National Electrical major appliances in the territory during the same period totaled 18,500

(*Concluded on Page 14, Column 3*)

MacGrath to Supervise Westinghouse Dept. Store Operations

MANSFIELD — H. F. MacGrath has been appointed department store supervisor of household refrigeration sales for the merchandising division of Westinghouse Electric & Mfg. Co., according to R. C. Cosgrove, manager of Westinghouse household refrigeration sales.

Mr. MacGrath in 1921 formed one of the first refrigeration distributorships in the eastern territory. Five years later he became district sales manager of the Seeger Refrigerator Co., which position he held until 1931, when he became manager of the cabinet contract department of Kelvinator Corp.

In 1934 he formed the Major Appliance Corp., a Chicago Sears' operation, selling department store and furniture accounts. From 1936 to his present appointment he has been eastern sales manager of Universal Cooler Corp.

His new position will consist of general supervision of sales and contact of department stores throughout the country. Mr. MacGrath will maintain his office at Westinghouse headquarters, Mansfield.

Regional Mart at Cleveland Held Successful

CLEVELAND—With attendance at the Electrical Merchandise Mart and Clinic registered in the hundreds, the cooperative promotional activity sponsored by the Electrical League of Cleveland in the Hotel Cleveland here Sept. 14-17 established a successful precedent as first regional merchandise showing of its kind held in this country.

Twenty-three exhibitors, among whom were distributors, wholesalers, and manufacturers, maintained booths for the four-day show.

The clinic, held in the hotel ballroom, was attended by approximately 300 dealers and their salesmen.

Sterling E. Graham, president of the Cleveland Advertising Club and advertising manager of the Cleveland Plain Dealer, was first clinic speaker. Mr. Graham analyzed the Cleveland appliance merchandise market.

Treating the trade area by income zones based on rentals paid, Mr. Graham stated that half the population lives in areas in which $40 or more is paid for residential rent per month.

This figure, he pointed out, stands for from 18 to 20% of the average family's earned income. Statistics

(*Concluded on Page 2, Column 5*)

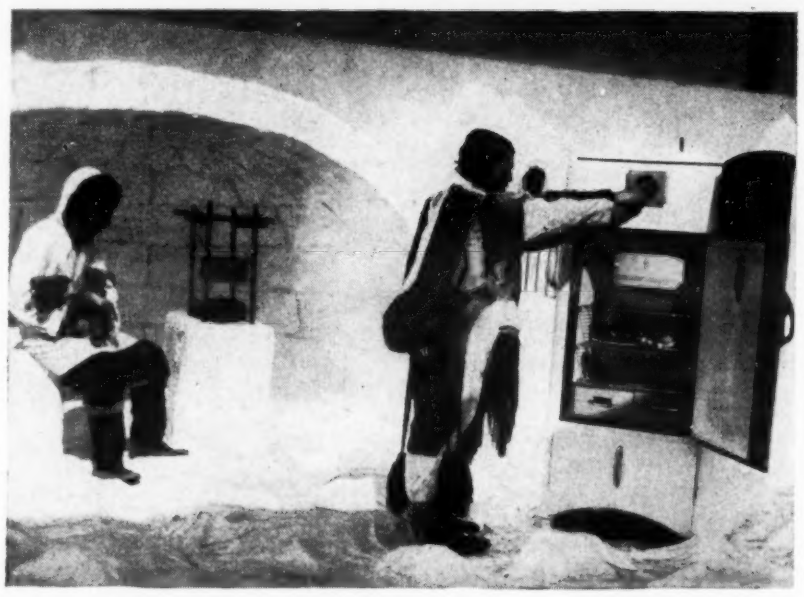
Frigidaire Men Hear G-M Heads Speak

DAYTON — Representatives of Frigidaire division, General Motors Corp., participated in a nation-wide dealer coordination luncheon sponsored by G-M on Sept. 15.

From a key meeting in Chicago, the program was carried through a telephone hook-up to approximately 7,500 G-M dealers, field executives, and guests who were gathered at simultaneous luncheon meetings in 51 cities throughout the country.

Speakers on the program were Alfred P. Sloan, Jr., chairman of the board, William S. Knudsen, president, and Richard H. Grant, vice president, of General Motors Corp.

A Salesman's Dream Realized



That fabled feat, selling an electric refrigerator to an Eskimo, was achieved by Stewart Edgar of the Toronto district of Northern Electric Co. at the recent Canadian National Exhibition. A Leonard refrigerator replaced the usual Arctic snow-box outside the igloo door in the Exhibition's Eskimo display. The Eskimo housewife is shown adjusting the cold control dial to make more ice cubes, which the Eskimos munched as fast as they were frozen. Some Arctic artichokes are in the food compartment.

* * *

Leonard Replaces Arctic Snowbox

TORONTO, Ont., Canada—Missing the Arctic snow-box outside their igloo door, Eskimos who set up an authentic village on the Toronto Exhibition Grounds lost no time in purchasing a Leonard electric refrigerator from Stewart Edgar of the Toronto district of Northern Electric Co.

The Eskimos were suffering from the heat, and one demonstration closed the refrigerator sale. After the refrigerator was connected up, the machine was kept busy making a constant supply of ice cubes, which the Eskimos munched as rapidly as they were produced.

Emil St. Goddard, veteran St. Boniface "musher" who is with the exhibit, declared he would probably use the refrigerator to keep his husky puppies cool if the heat continued. They were not accustomed to Toronto's August temperature.

Leaking Valve Blamed As Probable Cause Of Detroit Tragedy

DETROIT, Sept. 21—Detroit newspapers in front page articles quoted Deputy Coroner Lyle C. Ling as declaring that a leak in a valve of a multiple refrigerating system installed in 1930 caused the deaths of John J. Koss and his wife Pearl, who were found dead Sunday, Sept. 19 in their basement apartment in a building at 70 W. Warren Ave. here.

The newspaper stories stated that Dr. P. W. Morse, pathologist, had said that traces of methyl chloride gas were found in a closet in the apartment when the police first entered it. The complete report on an autopsy being performed by Dr. W. Thomas Love was not yet ready today.

Until the autopsy report is received it cannot be definitely stated

(*Concluded on Page 20, Column 1*)

Air Conditioning Will Aid World Peace, Boulware Tells Boston Conference

BOSTON — International tension will be reduced in the future through the widespread use of air conditioning in tapping untouched supplies of raw materials necessary for maintaining the "balance of power" between nations, L. R. Boulware, vice president and general manager of Carrier Corp., predicted in an address Sept. 21 before the ninth Boston Conference on Distribution.

Mr. Boulware said that air conditioning's part in opening up heat-and-humidity-sealed gold and copper mines already had proved a factor in "world economy and the world struggle for power, both of which have a direct effect upon the distribution problems in any given country.

"For instance," he pointed out, "air conditioning is aiding the mining of gold in South Africa today over 8,000 feet below the surface—this being over 2,000 feet below the point where human life and effort would be possible without air conditioning. Deep gold mines are similarly equipped in Brazil, and others are in contemplation.

"The effect of air conditioning on the acceleration of the mining of gold is a very marked factor in the growing monetary problem of the world, the difficulties between nations and the balance of power between nations.

"In this country, the first copper mine has just been air conditioned to permit going down profitably to some lower veins that could not otherwise be even reached.

"In a foreign country now very much in the world news, the possibilities of air conditioning their old coal mines are being checked, and if it can be done successfully, the military experts of the country feel it will be almost the final answer to the preparation against a potential aggressor that has been looming on the horizon now more seriously with each month."

In tracing the effect of air conditioning on distribution, the Carrier official named four other effects—on goods during their manufacture, transportation, display, sale and use; on the distribution personnel; on the buyer; and on the buying power of the public.

He noted that in textile manufacturing, particularly rayon, air conditioning was practically indispensable, while many fruits and meats are being transported in air-conditioned trains and ships.

"The effect on the goods in the matter of their display, sale and use in an air-conditioned atmosphere —even from just the one factor of the air in enclosure being free of dirt and smoke—is all too plain," he said.

"First effect on the goods them-

(*Concluded on Page 2, Column 1*)

Steering Committee Is Named for Nema Refrigeration Drive

NEW YORK CITY—A steering committee composed of F. R. Pierce, Frigidaire division, General Motors Sales Corp.; Roger Bolin, Westinghouse Electric & Mfg. Co.; and J. A. Sterling, Norge division, Borg-Warner Corp., will supervise the advertising and sales campaign which has been launched by the household refrigeration section of National Electrical Manufacturers Association.

The campaign, which has been inaugurated locally for a six-week period in Dallas and Oklahoma City, may eventually be expanded into a national activity.

Ralph H. Jones, Inc., advertising agency, will handle the campaign.

Dr. Plank and Dr. Linge Visit Frick Plant

WAYNESBORO, Pa.—Dr. Rudolph Plank, director of the Kaltetechnisches Institut at Karlsruhe, Germany, and his associate, Dr. Ing. Linge, visited the Frick Co.'s factory and offices here Sept. 9, and discussed progress in frozen foods, advanced methods of ice making, and new refrigerants with company officials.

25,647 Kitchens Sold in Drive By 23 Utilities

Washington, D. C. Bureau Sells 2,905; Sales Total $5,500,000

NEW YORK CITY—The part played by kitchen modernization programs in the sale of electrical appliances is shown in the annual report of the National Kitchen Modernization Bureau, which records 1937 sales up to Aug. 1 of 25,647 all-electric kitchens, at a total dollar volume of $5,500,000, by 23 of the utility companies participating in the movement.

Of this total number of reported kitchen sales, 9,863 covered the sale of an electric refrigerator, range, and water heater, and 15,784 the sale of an electric refrigerator and range.

Washington, D. C. reported 2,905 all-electric kitchens installed in homes and apartments up to Aug. 1.

Increases in the sale of individual pieces of kitchen electrical equipment resulting from the National Bureau's program is typified by the following:

Associated Gas & Electric Co., using a similar ensemble selling plan, reported the sale of 31,303 electric refrigerators, 5,780 electric ranges, and 2,434 electric water heaters between Jan. 1 and May 1 of this year.

In Brooklyn, 1,416 electric refrigerators and 639 electric ranges have been sold this year as a result of the local modernization bureau's work. Sixty-two all-electric kitchens have been installed by Alabama Power Co., but individual sales of

(*Concluded on Page 2, Column 3*)

Warren-Norge Alters Trade-in Clause

NEW YORK CITY — Substitution of a new trade-in allowance clause stipulating payment of the sum which the dealer can currently resell the article for has been announced in the price-control contract under the Feld-Crawford Act, by Warren-Norge Co., metropolitan Norge distributor.

A fixed maximum allowance of 10% of the value of the new article purchased when a used mechanical refrigerator is offered in trade, was previously stipulated in Warren-Norge's trade-in allowance clause. The revised clause is as follows:

"In no event shall the trade-in allowance on a used mechanical refrigerator be a greater amount than the dealer can currently resell it for."

The new contract also establishes a set maximum percentage on non-mechanical refrigerators offered in trade, it is reported.

Norge dealers in the territory were informed of the change of policy Sept. 20.

Tax on Air Conditioning Proposed in Cincinnati

CINCINNATI—A proposal calling for taxation of air-conditioning systems to finance enlargement of the city sewerage system may be recommended to the city council by C. O. Sherrill, city manager.

The city manager stated that he had been informed that the discharge from water-cooled air-conditioning systems used by many local establishments was threatening to overtax sewers in the basin section of the city.

As precedent for his proposed recommendation, City Manager Sherrill declared that Columbus, Ohio, already had an ordinance taxing air-conditioning installations.

Better Employer-Employe Relations a Major Benefit of Air Conditioning, Boulware Says

(Concluded from Page 1, Column 3)

selves during their manufacture, transportation, display, sale and use is that of making available a greater variety of goods over a greater area of the world's surface, of a better quality at a lower price, and on a more nearly year around, non-seasonal basis than would otherwise be possible."

Turning to personnel relationships, Mr. Boulware said that both the employe and the employer could benefit from clean, healthful, comfortable air. Decisions, he said, would be made better and more "eagerly and confidently carried out by associates and subordinates."

Greater effectiveness of the distribution personnel arises from the better morale, the greater patience, the natural and fresher appearance, the more cheerful disposition, the absence of distraction from outside noises, the greater energy and endurance that come from a part of their living, eating, traveling and working time being spent in an air-conditioned atmosphere, he pointed out.

MORE ENERGY

"One of the most important factors in producing this effect," he stated, "is the ability of an air-conditioned atmosphere to induce combustion of the energy-giving foods and, hence, cause those foods to be eaten and the benefit from them to be obtained in all seasons.

"A diet of lettuce, tomatoes, and iced tea does not furnish the energy required for the creative salesman, executive or worker. As more and more of the enclosures become air conditioned—and in the combustion of food we get this cumulative effect at home, at work, in restaurants, at play, and in travel—the more and more do we eliminate the seasonal variation in the effort, receptivity, and buying power in sales work.

"In this connection, the effect upon the heads of businesses and their department heads should not be overlooked. They are obviously worth their hire during the periods of the year when indoor conditions may be easily maintained at the point which naturally produces the greatest efficiency in this group, and it is being found very profitable at other periods of the year to maintain conditions which will be conducive to their continuing these same characteristics of energy and endurance, creative ideas, patience, tolerance, and natural good humor which are so necessary for the securing and weighing of information on which to make decisions.

"At a time when employer-employe relations are being confused by the clamorings of those who seek the favor of the many through their contention that all employers indiscriminately are of evil intent, it is being found profitable for each employe—whether he have a grievance or research information to impart—to feel that he has had a patient, tolerant and sympathetic hearing by an executive who is calm and of even temper, who in turn can impose a decision that will be accepted and carried out by the employe with the same confidence in its soundness and fairness as that with which it is rendered."

GRATEFUL BUYERS

Of the buyer-seller relationships, Mr. Boulware said:

"Air conditioning brings the seller a happy, buoyant, grateful buyer at all seasons. It tends to eliminate the exodus of employes and purchasers to isolated retreats in order to escape from the heat, from hay fever, and from the general doldrums that inflict themselves upon centers of population in bad weather.

"If air conditioning succeeds in diminishing the summer slump, as it now gives every promise of doing, its effect on employment, on buying power, on selling cost, on the efficiency of the distribution personnel needs no further elaboration here."

Buying power of the public for all goods would be greater, he explained, through income and employment being more evenly spread over all seasons, through more efficient use of facilities, through more energetic and effective personnel, all resulting in a lower selling cost, a bigger value, and a higher standard of living from any given number of man-hours per week or year.

BIGGER PAYROLLS

Some of this extra buying power, he said, will come from employment in the air-conditioning industry itself, "which is already no small infant in the matter of payrolls, in the engineering, manufacturing, sales, installation, service, and operation, as well as in the matter of the power and water consumption involved.

"It comes again from allied manufacturing such as in the field of motors, pumps, fans, sheet metal, chemicals, piping, controls, etc. Third, it comes from the creation of the need for enlarged plants for electrical current production, public water supply, and sewage facilities, as well as the greater use of fuel and supplies for the plants which manufacture the equipment, together with plants in which this equipment is used."

Idyll for an Industrialist

Major Howard E. Blood, president of Norge Division and executive vice president of Borg-Warner Corp., takes time off from his industrial activities to operate a model farm at South Lyons, Mich.

He is shown here inspecting a successful effort to save the life of a highly productive fruit tree, damaged by fire, through scientific tree grafting. Sixty-one acres on the farm are devoted to orchard. Also maintained on the property are a herd of 160 prize Hereford steers and 10,000 chickens.

Mr. Blood's farm is completely mechanized and is managed upon scientific principles so that his products generally bring premium prices on the market. It is claimed that the farm has made a substantial profit each year since its inception.

Kitchen Modernizing Bureau Reports 182% Rise in Number of Local Units

(Concluded from Page 1, Column 5)

refrigerators, 5,700 ranges, and 3,000 water heaters.

Total sales in Georgia Power Co.'s territory for the first six months of 1937 (including both company and dealer sales) were 16,000 refrigerators, 3,700 ranges, and 2,250 water heaters.

Oklahoma Gas & Electric reported 9,812 refrigerators added to its lines during the year, and Public Service Co. of Oklahoma added to its lines during the same period five all-electric kitchens, 6,325 refrigerators, 222 electric ranges, and 22 electric water heaters. All of these companies have concentrated on the kitchen modernization approach to their markets.

Addition of 100 new kitchen modernization bureaus to the 55 established in 1936 increased the number 182% from Aug. 1, 1936, to that date this year, according to the modernizing Bureau's report.

Local bureaus have been established in 40 states and the District of Columbia, and the national bureau reports that in many cities and areas kitchen modernization is being actively promoted without formal establishment of local bureaus.

In New England, the report says, nearly every utility has adopted the kitchen modernization program in some form for all of its properties.

The Connecticut Light & Power Co. has all its salesmen and home service employes trained in the kitchen modernization approach, and picked salesmen are assigned to this type of selling exclusively. A rounded program of advertising, promotion, model kitchens, and kitchen planning service is carried on.

This promotion of modern kitchens by utility companies has made the movement state-wide in coverage, even though in some states the number of bureaus existing is small, the report states.

Miami has the only electric kitchen bureau in Florida, the report points out, yet the kitchen modernizing movement is state-wide; the utility companies which serve the state have made it their foremost merchandising endeavor.

In Georgia there are local bureaus in the principal cities only. Due to the work of Georgia Power Co., however, kitchen modernizing activity covers the state.

Alabama has only two bureaus, both in Birmingham. One of them confines its activity to that city. The other serves as the core of a state-wide effort in which both the Alabama Electrical Dealers Association and the Alabama Power Co. cooperate.

In Wisconsin, kitchen modernizing is one of the approved activities of the state's association of utilities. Minnesota and the Dakotas are similarly banded together to promote kitchen modernization by joint action of most of the utility companies.

In the more sparsely settled states, action of the utility companies had established local bureaus in every town and city of considerable importance. In Washington there are 16 bureaus in as many cities. Oregon has eight bureaus, Montana has nine, and Idaho seven.

Speakers at Clinic Advise Dealers on Building Sales

(Concluded from Page 1, Column 2)

important in Mr. Graham's survey were that: the "upper half" of the population buys 75% of the electric refrigerators, has 72% of the residential telephones, buys 71% of the food, 66% of the drugs, and 70 to 75% of the new cars.

Barclay Meldrum, president of Meldrum & Fewsmith, Inc., advertising counselors, and the second Clinic speaker, urged dealers to cooperate more closely with manufacturers' advertising programs. Calling the dealer the manufacturer's only contact with the public, Mr. Meldrum criticized the theory of some dealers who state they are not interested in advertising a manufacturer's trade or brand name.

Getting the "plus" business in every local market by more door-to-door salesmanship was the advice which Ell C. Bennett, president of Electrical Publications, Inc., Chicago, third speaker, gave to the clinic. He reminded the dealers that 70% of all sales are made in the home.

C. M. Ripley of the General Electric Co., Schenectady, completed the clinic program by telling about his all-electric home and how it costs less to live better in it.

J. E. North, president of the Electrical League, presided at the clinic sessions.

Opening the exhibit, a range dealers' breakfast meeting was held Tuesday morning, Sept. 14, with George A. Hughes, president of Edison General Electric Appliance Co., Chicago, as speaker.

Winding up the clinic sessions, the Electrical League was host to dealers at a dinner held Wednesday evening. James Gheen, New York humorist, spoke to the 276 guests present.

Record of registration, kept at the Westinghouse booth showed a total of 351 visitors at closing Wednesday night, according to J. C. Thomas, sales promotion manager for Westinghouse Electric Supply Co.

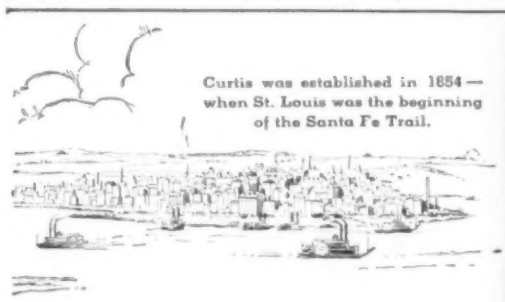
This is the initial attempt of the League in staging a mart and clinic, according to Ralph H. Jones, secretary, and League members and exhibitors are agreed that a similar exhibit and clinic should be held next year.

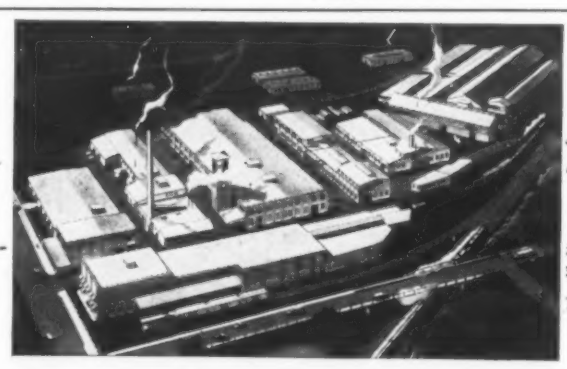
Among appliances shown were exhibits of Westinghouse, General Electric, Graybar Electric Co., Stong, Carlisle & Hammond, and others. The exhibit included refrigerators, washers, ironers, ranges, and smaller appliances.

Baltimore Dealership Opened

BALTIMORE—L. J. Garrigan and H. E. Wagner have opened Garrigan & Wagner appliance store at 1827 Maryland Ave. here. Refrigerators handled include Frigidaire, General Electric, Westinghouse, and Stewart-Warner.

ANSUL CHEMICAL COMPANY
MARINETTE ◆ ◆ ◆ ◆ WISCONSIN


Curtis was established in 1854 — when St. Louis was the beginning of the Santa Fe Trail.



20 ACRES of Modern Facilities . . .

● Curtis condensing units are produced in a comprehensive 20-acre plant, equipped with every modern engineering and production facility. They are the development of 83 years of designing and manufacturing experience, by an organization which established its name for reliability when Ulysses S. Grant was a wood-hauler on the streets of old St. Louis. That was 1854 — and from that beginning Curtis has reached the high and substantial place it now holds in the industry.

Eighty-six units comprise the Curtis line of today. Sizes range from 1/6 HP to 30 HP, with air-cooled and water-cooled models. Unit coolers and coils to match are always in stock.

Curtis units are built to meet definite requirements — not price levels. Quality is the first consideration — price comes after. That is why so many dealers and installation engineers insist on Curtis units for all jobs. Curtis reputation safeguards their own.

Ulysses S. Grant probably hauled wood past the first Curtis establishment.

CURTIS REFRIGERATING MACHINE COMPANY
Division of Curtis Manufacturing Co.
1912 KIENLEN AVENUE ST. LOUIS, MO.

Represented in Canada by
Canadian Curtis Refrigeration Co., Ltd.
20 George St., Hamilton, Ontario

CURTIS

Specialty Selling Has Made Important Contributions to Higher Standard Of Living, Whitwell Claims

BOSTON—"Selective" or specialty selling of electric refrigerators, other household appliances, and air-conditioning equipment has been an important contributor to the wider distribution of better goods, at lower prices, and a consequent higher standard of living, George E. Whitwell, vice president in charge of sales of Philadelphia Electric Co., told a session of the Boston Conference on Distribution here Sept. 21.

Selective selling is usually applied to new products, or to new uses for existing products; consequently, the wider distribution which it creates has a profound effect on social and economic standards, Mr. Whitwell pointed out.

Praising the manufacturers of electric refrigerators, ranges and water heaters, and air-conditioning equipment for their courage in following through on their merchandising efforts despite the depression, Mr. Whitwell quoted largely from his company's records to establish his contention that expanded production and higher standards of living go hand in hand.

LIGHT DRIVE CITED

Citing the "Better Light—Better Sight" campaign on portable lamps as one instance in which selective selling had produced definite social benefits in addition to expanding the use of electricity and developing a new lamp industry, Mr. Whitwell turned to the electric range and water heater as his next example, with particular reference to experiences in the Philadelphia territory.

"In 1931," he said, "there were probably 6,000 or 7,000 electric ranges in use in our territory of something more than 2,000,000 people, and there were only a handful of electric water heaters. It seemed a very difficult problem to have to pick two devices, neither of which had any public acceptance, to use as leaders, by means of which to climb out of some of the difficulties in which we found ourselves.

40,000 UNITS SOLD

"Yet in six years the public in our area has spent about four million dollars for some 40,000 electric ranges and electric water heaters—all the result of intensive selective selling.

"The consequences have been the expansion of the industrial concerns that make these devices, work for the contractors who install them, and decidedly a new use for an old product; but, also, there has evolved definitely a higher standard of living and greater satisfaction, convenience, comfort and labor-saving for those who have bought these ranges and water heaters.

LOWERED POWER RATES

"What else has this range and water heater program meant? In six years, five of them during a depression, the increased use of residential electricity made it possible for our company to decrease the average cost of electricity in homes by almost 2 cents a kilowatt-hour, or practically 30%. From a figure of about 6 cents which it was in 1931, it has been decreased to about 4 cents. Yet it didn't just happen. Selective selling had to be accomplished.

"What else has occurred? During that same period the average residence customer has increased his use of electricity for labor-saving devices that electricity brings into the home by almost 40%; yet his annual payments to us are hardly more than they were six years ago.

REFRIGERATOR DEVELOPMENT

"Then there is the mechanical refrigerator. I sometimes marvel at the vision and courage of the electric refrigerator manufacturers that caused them at the very beginning of the depression to start out on a tremendous drive to bring that new device into the homes of millions.

"Yet their expansion, their improvement of their product, the new devices that they brought out, and the new uses that developed for refrigeration have brought about a situation where, in the United States, about 2,000,000 electric refrigerators went, during 1936, into the homes of the public.

"There has been no time in the last six years when the sale of this product has not exceeded its sale during the preceding year. But 10 years ago there was no such thing as a really practical commercial electric refrigerator. That which existed cost $400 and $500 per unit. Today the average price is less than $200.

63,000 SALES IN 1936

"In the Philadelphia area alone there were added to our lines last year something more than 63,000 electric refrigerators, having a value of about $11,000,000.

"This is a volume of trade which was created as the product of courageous selling in a depression time. To the merchants, dealers and others interested in that device in our territory, it brought $11,000,000 last year and you can't laugh off $11,000,000 worth of anything.

"What have been other improvements in connection with the refrigerator? Marked betterment in standards of living. In 1920, had there been a good electric refrigerator, it would have cost approximately $63 a year for electricity to use it. This year an infinitely better box will cost about $12 or $14 a year in electric current for its use.

"What does that mean? It means simply that, in 1937, the residential users of electricity in our territory will use more electricity by two times for electric refrigeration alone than was used for all domestic purposes in 1920. Is that an advance in the standard of living coincident with the advanced production of new products, new processes, new uses and lower costs?

AIR-CONDITIONING GROWTH

"Air conditioning was something practically unknown, except in a few industries where it was essential, as short a time ago as five or six years. The necessity for developing that market began practically with the start of the depression.

"What has happened with respect to this new industry in our territory alone? Simply this: Today the Philadelphia Electric Co. receives about one-half million dollars a year revenue from the use of electricity for air conditioning. Over half of that load has been added since 1932.

"What does that mean? In the first place, we know of no instance, and we have examined many of them in our territory, where an air-conditioned place is not a better place in which to work, to live or to play. We know of no instance where an air-conditioned establishment has not reported that its employes have enjoyed better health, have perfomed better work, and have lost less time through absence due to physical ailments. It has contributed to the betterment of humanity; yet, it has brought its business profits too."

REFRIGERATION
ENGINEERS
DESIGNERS
DRAFTSMEN

WANTED—Engineers, experienced in design of refrigeration compressors. Openings also for designers and draftsmen. Apply by letter only, giving full qualifications and salary expected.

CARRIER CORPORATION
DEVELOPMENT DEPT.
SYRACUSE, N. Y.

200 Stewart-Warner Dealers See New Radios at Norfolk

NORFOLK, Va. — Two-hundred Stewart-Warner dealers of Virginia and eastern North Carolina were guests Aug. 18 of Dix-Bowers Co., distributor, at a showing of the new 1938 line of radios.

G. A. Dixon of the distributorship opened the meeting, and discussions were conducted by I. W. Veeck, factory representative from Chicago, and George H. Bowers, of Dix-Bowers.

Electrolux-Cooled 'Snakesnacks' Send Adventurous Epicures into Ecstasies

ARCADIA, Fla. — Rattlesnake steaks, chops, and tidbits, considered as delicacies by some adventurous epicures, are kept fresh and wholesome in a kerosene-operated Servel Electrolux refrigerator at the headquarters of Floridian Products Corp.

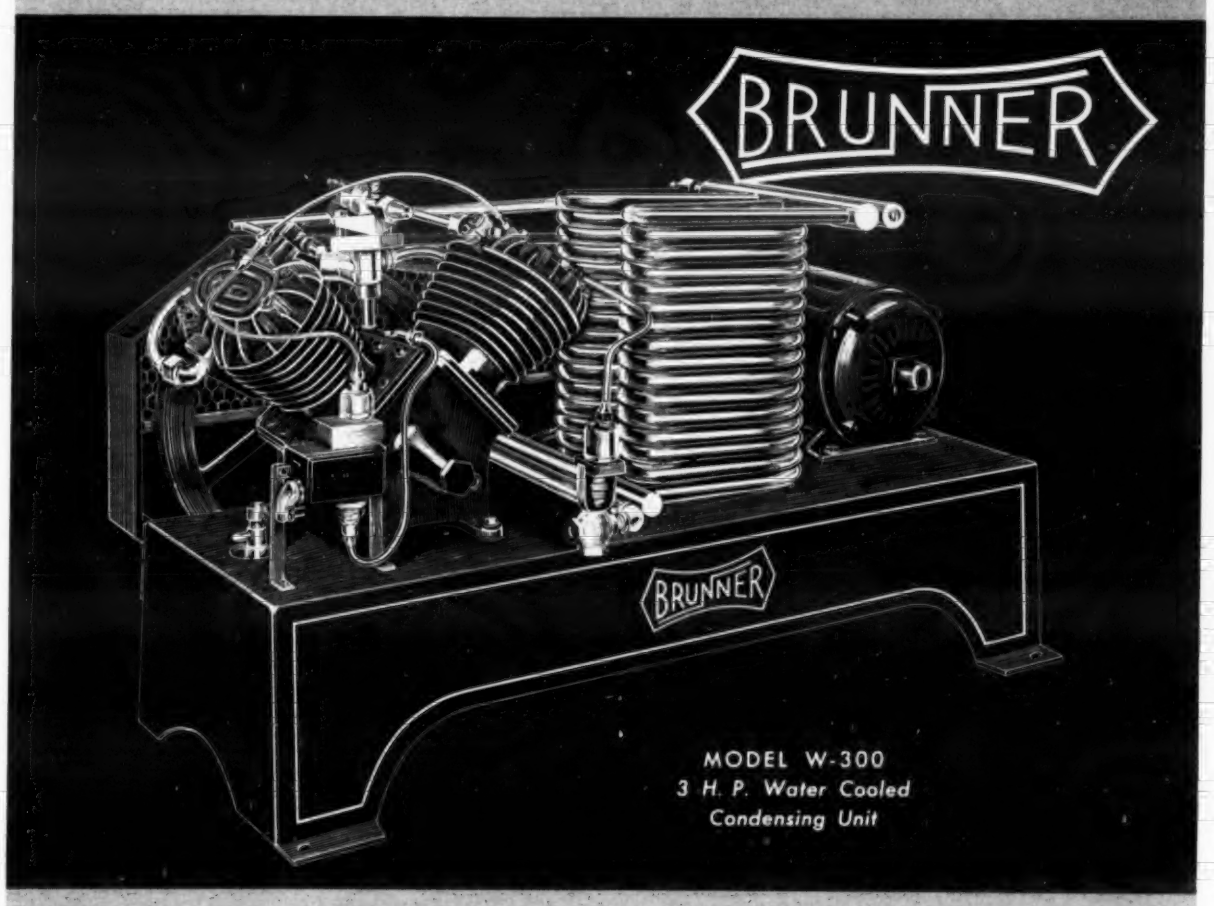
The refrigerator was sold to George K. End, proprietor of Floridian Products Co., by Charles Green, Servel distributor at Tampa, Fla.

Preparation of rattlesnake meat for the market forms a major part of the activites of Floridian Products Co. After the snakes (which average 6 feet in length and 15 lbs. in weight) are killed and thoroughly bled, they are skinned and dressed. Then the meat is either blended with a seasoned sauce and packed in tins, or else smoked over a hickory fire and packed in cellophane packages which sell as "Snakesnacks."

Mr. End first cooked some of the white, glistening meat of a diamondback rattler as an experiment. When he discovered that it was extremely palatable, he decided to cash in upon his experiment.

To test public reaction to rattlesnake meat, he packed some of it in cans and had it served at a Florida convention of the American Legion. It was the enthusiastic acceptance of rattlesnake meat at this convention, and the flood of newspaper publicity which followed, that determined Mr. End to form Floridian Products Corp.

THE DYNAMIC BALANCE OF RECIPROCATING PARTS INSURES SMOOTH, VIBRATIONLESS OPERATION



MODEL W-300
3 H. P. Water Cooled
Condensing Unit

Balancing the opposing masses of fast-moving metal in a complicated mechanism like the modern refrigeration unit is not the product of slide-rule computation . . . not a run-of-the-draftingroom problem. *Dynamic balance*—bringing each and every moving part into "mechanical accord" with every other part—this is the outcome of tireless research, intimate knowledge of refrigeration conditions, plus years of manufacturing experience. It is embodied in today's smooth-running Brunner units . . . Look into this Brunner feature before you make any decision on the best equipment to install! Watch a Brunner in action. Put your hand on the sturdy base. Feel the low minimum of vibration dynamic balance achieves. Then: consider the extra years of service it is bound to deliver. You'll find full details in the new Brunner Refrigeration Catalog, listing 47 condensing units, air and water cooled, for nearly all refrigerating and air conditioning installations. Write: Brunner Manufacturing Co., Utica, N.Y., U. S. A.

BRUNNER
BUILDS FOR *Greater* DEPENDABILITY

SPECIALTY SELLING IDEAS

Inter-Store Competition Keeps Salesmen For Georgia Appliance Firm on Toes

HAWKINSVILLE, Ga.—Controlled and cooperative inter-store competition is the policy to which Goodwine-Kingston, Inc. attributed its record of selling $120,000 worth of household electric refrigerators from Aug. 1, 1936, to Aug. 1, 1937.

The firm, operating a central store here, has four branch stores in small, neighboring cities. In addition to handling Frigidaire refrigerators, the company sells laundry equipment, room coolers, attic ventilating systems and other appliances.

"With five stores, we have five sales organizations fighting for the business. Each of our stores is as competitive with the other as with any firm outside of our organization," states J. L. Kingston, president.

"However, while we encourage a competitive spirit, have no closed territories, and any salesman at any store is permitted to work anywhere in the state, we permit of no cut-throat selling methods. Each store protects its salesmen on prospects enlisted for future sales, and no conflict is allowed among salesmen on individual customers.

"We stimulate a high spirit of competition, but enforce cooperation."

Joint meetings of salesmen are held every 15 days in which, through an exchange of ideas, salesmen from all five stores may profit from each other's experience.

Each store manager hires his own salesmen and trains them himself, but the company has joint training schools for store managers.

Every 60 days, each one of the company's five stores holds a demonstration for the benefit of its salesmen. Prospects listed by the salesmen are given a special invitation to attend the showings, at which refreshments are served.

Prospects are not urged at the demonstrations to purchase appliance merchandise, the purpose being primarily to establish a closer prospect-salesman contact. Approximately 80% of the prospects who attend these demonstrations by definite appointment are later sold, according to Mr. Kingston.

"We find call-back contacts highly remunerative," he adds. "We require the salesman to call back three times within the first month after a major electrical appliance has been sold, both to make sure the customer is satisfied and to obtain possible new leads."

Founded in 1902 as a plumbing concern, Goodwine-Kingston, Inc. plans to open two additional appliance stores during the next six months.

Enlisting Theater for Month's Promotion Brings Ohio Dealer 20 Sales

PAINSVILLE, Ohio.—Better than "bank night" for Fred Leyde, Westinghouse dealer here, was the theater promotion spotlighting Westinghouse appliances which he conducted with the principal theater here, for it brought him 20 direct refrigerator and range sales.

The promotion consisted of a month's program in the Utopia theater in which a Westinghouse Technicolor short was run every night for 31 nights. Friday was "Westinghouse Night," capital-lettered in lights on the theater marquee, and featured in other publicity.

Merchandise awards were presented from the theater stage each Friday night. Awards were broadcast over a connecting speaker system in the Park Theater also.

A display of ranges, refrigerators, washers, ironers, and appliances was maintained in the theater lobby throughout the month.

A Westinghouse BX-63 washer was awarded the first Friday; two roasters and two food crafters were the second Friday's prizes; on the third, a TM-64 range, and on the fourth, an FPS-50 refrigerator, fan, iron, and toaster were given to theater-goers.

Average attendance at each of the "Westinghouse Nights" was 2,800. Mr. Leyde is still contacting leads obtained through the promotion, which started June 2 and ended July 2.

Year's Free Electricity Feature of Campaign

GRAND RAPIDS, Mich. — Free electricity for an entire year was offered to purchasers of Norge refrigerators during a recent "Norge Week" promotion campaign here. Dealers taking part were Van Den Berg Bros., H. F. Cole, Inc., Comstock's, H. S. Murrow, and Royal Appliance Co.

Study Consumers

Clifford Brown, art director, and John Boyd, copy chief of the Detroit office of Geyer-Cornell-Newell, start out to test consumer reactions to a campaign they are preparing for Kelvinator.

Gift Service Pushes Matched Appliance Presents to Brides

SALT LAKE CITY—To promote the sale of matched appliances to wedding gift purchasers, Auerbach's department store here keeps a bride's gift record book and offers a gift guidance service in its house furnishing department.

In an indexed note book, kept at the wrapping desk, all wedding gift purchases are entered under a bride-to-be's maiden and married names, according to alphabetical index.

Salesmen in the department inquire if each customer's purchase is meant for a wedding present, inform him of the record book, and look up articles which have been purchased for the bride.

The department head believes that shoppers will be more inclined to purchase electrical tablewares as gifts, when they know that recipients are receiving other appliances of the same style and pattern.

Weekly Advertisements To Promote Electric Kitchens in Georgia

ATLANTA—A series of weekly advertisements in the 16 daily newspapers in the territory covered by Georgia Power Co. is the backbone of a kitchen planning campaign recently instigated by the utility. Each insertion will be built around photographs of all-electric kitchens in Georgia homes.

Copy will quote testimonials from the women whose kitchens are shown in the advertisements. Each insertion will contain a coupon, offering to send a Georgia Power home economist, trained in kitchen planning, to any customer considering remodeling her kitchen.

Not only will the home economist pave the way for the salesman's call, but she will also do a major part of selling the electric equipment for planned kitchens, according to the utility's program.

Texas Electrolux Dealer Finds Valuable Market in Sales to Tourist Camps

HOUSTON, Tex. — Specializing in two relatively untouched fields—tourist camps and oil field camps—will go a long way toward helping Modern Appliances, Inc., Servel Electrolux dealer here, realize its 1937 quota of 2,500 gas refrigerators, in the opinion of Sales Manager C. Scheidemantel.

Several hundred refrigerators have been sold by the company to tourist camp operators, oil field workers, and other industrial outlets by a little creative merchandising showing these prospects how they can use mechanical refrigeration to advantage and profit.

"We are developing a fertile field in the tourist camp," says Mr. Scheidemantel. "Recent sales include single jobs to Valencia Courts of 43 units; the Camp San Jacinto, 33 units; Wayside Courts, 14 units; and Hill and Bracewell Tourist Camps, 12 units.

"The tourist camp business is growing rapidly," he adds, "and the camps we are selling today will be adding 10 to 30 additional cottages tomorrow. And they will be elaborate, well-equipped structures. Operators are no longer throwing together a shed for hurried shelter. Real money is going into these camps, and every cottage is being equipped with comforts which the hot climate here demands.

"Some of the camps we are selling are installing air conditioning; a master air-conditioning system, in some instances, for temperature and humidity control, and in others a fan system similar to attic ventilation.

Road-weary travelers welcome a home-like cottage where they have instant refrigeration and other comforts, the company tells tourist camp prospects. Besides, the traveler is not acquainted with where to buy ice, and many guests arrive late at night, after these places close.

Camp operators are shown that they can keep a number of the refrigerators operating at all times during slack periods so that every traveler has instant service. As the cottages fill up, other units may be turned on and made ready for new arrivals.

"Most of the units sold for tourist camps are 4-cu. ft. units," says Mr. Scheidemantel, "because of the limited space in these cottages. But there is a good profit on these sales for the quantity means no added selling cost, and the average owner of a modern camp is receptive to any plan that will increase patronage.

"We show prospects that they can easily get from 50 cents to $1 more a day for a cottage equipped with some sort of cooling apparatus which is more than enough to pay for the appliances. The camps we have equipped with refrigerators are running well over 100% occupancy, some cottages having a turn-over of two guests within one day.

"We are making a special effort to catch all new building operations with a view to selling the owners the idea of including mechanical refrigeration in the original plans.

"Oil field camps are providing another good outlet for refrigerators," adds Mr. Scheidemantel. "Many oil field workers live a transient life in trailers, and are a fine market for small household refrigerators. The oil companies permit the workers to pipe their gas from the fields at no cost. With proper refrigeration these field workers have been able to keep on hand supplies of fresh meats, vegetables, and other foods, a practice which has never before been possible.

Modern Appliances, Inc. operates four stores in Houston. J. S. Kendall is president, S. C. Grasinger is vice president.

Trained Home Economists Play Vital Part in Kelvinator Merchandising, Burritt Believes

DETROIT — Trained home economists employed on the staffs of distributors and dealers are playing a vital part in the 1937 sales of Kelvinator household appliances, says H. W. Burritt, vice president in charge of sales, Kelvinator division of Nash-Kelvinator Corp.

"Monthly reports from Kelvin Kitchen, headquarters of this home economics work, show that 30,000 women have attended cooking schools, open house programs and users' classes since the beginning of the year," states Mr. Burritt. "This record indicates a marked increase in electric refrigerator, range, and washer sales, and has added many names to the lists of prospective purchasers."

By telling the Kelvinator story and demonstrating products beforehand, according to Mr. Burritt, home economists are making the job of selling much easier for the distributor or dealer.

"The distributor or dealer ties-in his selling job profitably with the home economist's lecture on home improvement. Lectures on food preservation, cooking, or laundering clothes, increase women's buying interest in the products which aid them in these tasks," he says.

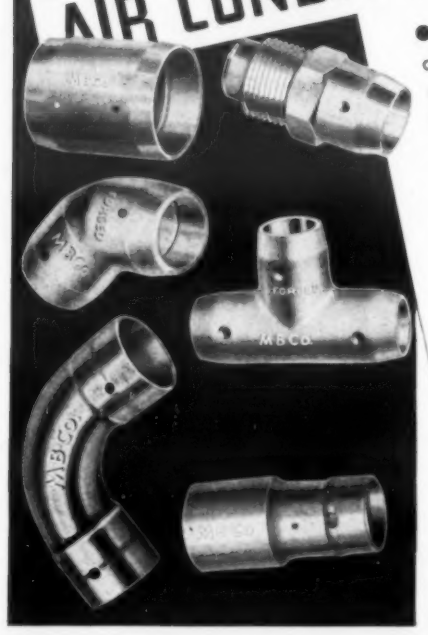
Actual results illustrate the value of this service performed by the home economist. Cooking schools conducted in North and South Carolina are known as "Kelvin Home Schools." Here the emphasis is put on the electric appliance as a contributing factor to "better living at a lower cost" for the average income family.

"Extensive promotion has come through cooperative newspaper efforts," Mr. Burritt cites. "In California, newspaper advertising has been effective in drawing large groups of women to cooking demonstrations.

"Kelvinator electric refrigerators and ranges are used in demonstrations at cooking schools sponsored by newspapers in Connecticut, Illinois, and other states. Recently a four-day school of this type attracted as many as 500 women daily."

TOP PERFORMANCE FITTINGS •

FOR REFRIGERATION AND AIR CONDITIONING ★



● The use of STREAMLINE Solder Fittings assures permanently tight connections for electric refrigeration and air conditioning work. They are absolutely refrigerant and seep-proof. Vibration cannot work them loose. They form a connection actually stronger than the tubing—yet much lighter and more quickly completed, and they reduce materially your fitting cost.

Brass Forgings which have a tensile strength of approximately 60,000 pounds per square inch, are used in the manufacture of our flared tees, elbows, valve bodies, etc. Specially treated drawn brass rod is used for integral parts of valves, flare couplings, fitting caps, etc.

We manufacture the most complete line of valves, fittings (both flare and solder type) and accessories for mechanical refrigeration work. Send for catalog R-3 and Price List 2003.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

★STREAMLINE
TRADE MARK REG. U.S. PAT. OFFICE
COPPER PIPE AND SOLDER FITTINGS

WILL BE WAITING TO SEE YOU AT BOOTH NO. 10—R. S. E. S.

and don't forget to check the DOOR GASKETS

In justice to your customers as well as yourself, don't fail to check the door gaskets on all refrigerators that are five years or more old. Chances are they have lost their efficiency. You may be sure the user is not obtaining economical refrigeration and it is an easy matter to show him where a few dollars spent for gasket replacement will be returned quickly in reduced operation cost. You make a profitable sale and the customer makes a saving. That's service.

And don't forget, too, that Miller is your logical source for gasket supplies. As the largest and oldest supplier of rubber parts to refrigerator manufacturers, Miller offers a simplified line of 20 gasket types with which you can service 80% of all units made. Complete stocks insure immediate delivery. Remember—check the door gaskets and you will get bigger checks from your customers. Get illustrated Miller price list from your local jobber or write direct.

THE MILLER RUBBER COMPANY, INC., Akron, Ohio

Have End-of-Season Sales Bogged Down?

Are your salesmen already sitting around waiting for 1938 models to appear? Some new merchandising ideas may jog your sales curve back up.

For instance, it's not too soon to start canvassing the tourist camps in your region, a market found lucrative by a Houston dealer, as reported on page four. The tourist season is just closing, and proprietors are likely to have the money *now*.

Also on page four is told how a Georgia dealer operating five stores keeps his salesmen hopping with friendly inter-store competition, how a dealer in Painsville, Ohio, used a theater promotion stunt to the tune of 20 sales, how a Salt Lake City department store is using a matched-wedding-gift service to promote sales of electrical appliances, and how a trained home economist boosts sales, as related by Kelvinator's sales vice president, Henry Burritt.

On this page are reported stories on a Lakewood, Ohio, dealer who successfully uses his own kitchen for demonstration of the all-electric appliance idea, a Chicago dealer whose ice-freezing stunt is proving the economy of electric refrigeration, and a Memphis dealer whose special department yields 500 washing machine sales a year.

Home Kitchen Demonstrates All-Electric Equipment for Lakewood, Ohio Dealer

LAKEWOOD, Ohio — Using the General Electric kitchen in his own home for demonstrating, and a "step by step" budget selling plan, Carl E. Fruehauf, head of the Fruehauf Hardware Co. here, is establishing a consistent record on G-E kitchen equipment sales.

Spacious, attractive, and equipped with electric refrigerator, range, dishwasher, waste disposal unit, ventilating fan, mixer, roaster, and other appliances, a combination sandwich bar and utility service cabinet, and planning desk with radio attached, the kitchen is making appliance selling a much easier job, Mr. Fruehauf says.

"A recent party that we had convinced me that word about the new kitchen will be spread around. The 18 guests were so interested in the kitchen that they insisted on cleaning up after the meal—washing the dishes and cooking utensils and operating the Disposall unit," he stated.

"You can't tell me that they won't talk about the kitchen to their friends.

"Customers are more attentive, and consequently remember what you tell them, when demonstrations are held in the kitchen. The prospect can see the equipment installed, operate it himself, and if he happens to be there around meal-time, can see and even taste the results."

Mrs. Fruehauf, who, her husband claims, has always been a good cook, is also one of his best salesmen. Elaborate word stories aren't needed in a demonstration made in the kitchen, he states.

Selling hardware exclusively when he first started the store, Mr. Fruehauf later added electric refrigerators, and small table and cooking appliances to meet neighborhood needs.

Seattle Dept. Store Finds Branch Aids Appliance Sales

SEATTLE—Establishing a branch appliance shop in a residential district three miles from the city center has enabled The Bon Marche department store here to overcome the sales barrier presented by downtown traffic problems, and has provided a display shop for evening demonstrations.

The shop is promoted by box insertions in the Bon Marche page appliance advertisements in metropolitan papers, and is featured in the West Seattle district community paper.

The branch shop differs from other "neighborhood stores" because it has the department store prestige behind it, a wider merchandise range, and a simplified credit system.

Completely equipped with appliances, glassware, and dishes, a model kitchen installed in the branch store is available to community clubs for benefit affairs.

Operated by its own manager and sales crew, the branch is closely identified with the main store and its policies. Personnel attend department meetings at the central store.

Men who live in the district where the store is located are employed as salesmen.

Negro Maids Stage Revolt Against the Washboard

EUFAULA, Okla. — Negro maids in this town have formed an agreement not to do washing for anyone who doesn't furnish an electric washing machine.

Ice-Freezing Display Makes Several Sales For Chicago Dealer

CHICAGO—Proving that ice can be frozen in an electric refrigerator more cheaply than it can be purchased from the ice wagon was the basis of a profitable promotion stunt utilized by C. O. Pemberton, manager of Calumet Utility Sales, local refrigerator dealership.

To dramatize this proof, Mr. Pemberton set up a display in his store, using a large model of one of the makes of refrigerators handled by his company.

He filled a large mold with water and placed it in the top portion of this refrigerator. He then shut the door and turned on the current. In 23½ hours the water in the mold had been frozen into a 75-lb. block.

During this period a meter on top of the refrigerator registered the number of kilowatts which had been required to operate the unit.

On this basis Mr. Pemberton computed that the refrigerator was capable of freezing 100 lbs. of ice at a cost of only 20 cents. Chicago ice retails for 60 cents per 100 lbs.

A sign, located on top of the box, suggested that visitors to the store "Look inside.—See for yourself how much ice this unit will freeze in one day."

Due partly to the newspaper publicity which it received, this stunt attracted considerable attention. Mr. Pemberton reports that several refrigerators, as well as other appliances, were sold to people who came in to see the display.

Special Year-Around Washing Machine Dept. Results in 500 Sales for Memphis Dealer

MEMPHIS, Tenn. — That washing machines can be sold successfully all year around by a firm with a special department and sales crew who will work on this appliance alone is proved by the Wallace Johnson Co., here, who sells more than 500 washing machines annually.

"Since we established a separate department with sales specialists, we have built up an all-year-around washing machine business," declared J. A. Leach, salesmanager. "We select salesmen who are pluggers, ones who want to earn a good income year after year, and we make it profitable for them to be with us.

"We have trained six men to specialize in washing machines. The refrigerator men on the outside can sell a washing machine provided they pick up the sale and close it without demonstration. On such sales the refrigerator salesmen get 10% commission.

"Our regular washing machine salesmen get 12% commission."

Mr. Leach explained that most of the washing machine sales are made as a result of demonstrating the units, and that his salesmen canvass to obtain prospects for demonstrations.

Working in protected territories, each salesman is required to make 20 contact calls on each day when no demonstrations are made. The men average two demonstrations daily in most cases, Mr. Leach stated, and contact only 10 new prospects on demonstration days.

"Our men make thorough demonstrations, usually 1 or 1½ to 2 hours each," Mr. Leach declared. "They close one out of four demonstrations made; and they sell many machines outright without demonstration."

Other points of policy governing the company's washing machine sales include low down payment plans. Very few trade-ins are taken, according to Mr. Leach.

"If the buyer operates a home laundry for the public, we get a substantial down payment and require larger instalments. But for the average homeowner, a small down payment is sufficient. Our repossessions in washers are less than 1%."

The firm allots $3 for advertising on each washer, using newspaper space chiefly, supplemented by radio spot announcements.

"We use three to four one-column by two or three-inch advertisements each week, and we find them more effective than one large newspaper advertisement," Mr. Leach stated. "We use the classified columns to keep all used washing machines moved out."

Washer salesmen average $13.50 on each machine sold. If they make their quota they get an extra 2% for the year. According to Mr. Leach, this practice makes the men think in terms of dollar volume for the entire year rather than so many units during a peak month.

Selling 500 units directly each year, the firm has also been selling an additional 500 units as distributor.

It's a **PLEASURE**
to work with
WOLVERINE
EXTRA SOFT COPPER
refrigeration tubing
YOUR JOBBER HAS IT
WOLVERINE TUBE COMPANY
1411 CENTRAL AVE. DETROIT, MICH.

CONDENSERS
DOMESTIC EVAPORATORS
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McCORD
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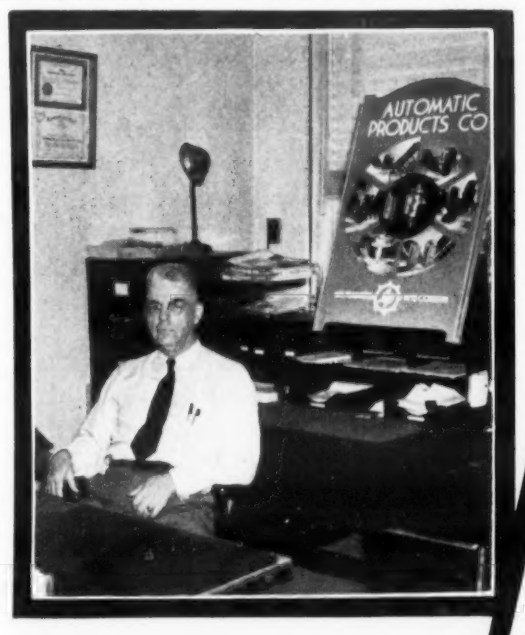
COMFORT COOLERS
MARKET COOLERS
UNIT HEATERS
CATALOGUES ON REQUEST
McCORD RADIATOR & MFG. CO.
DETROIT, MICHIGAN



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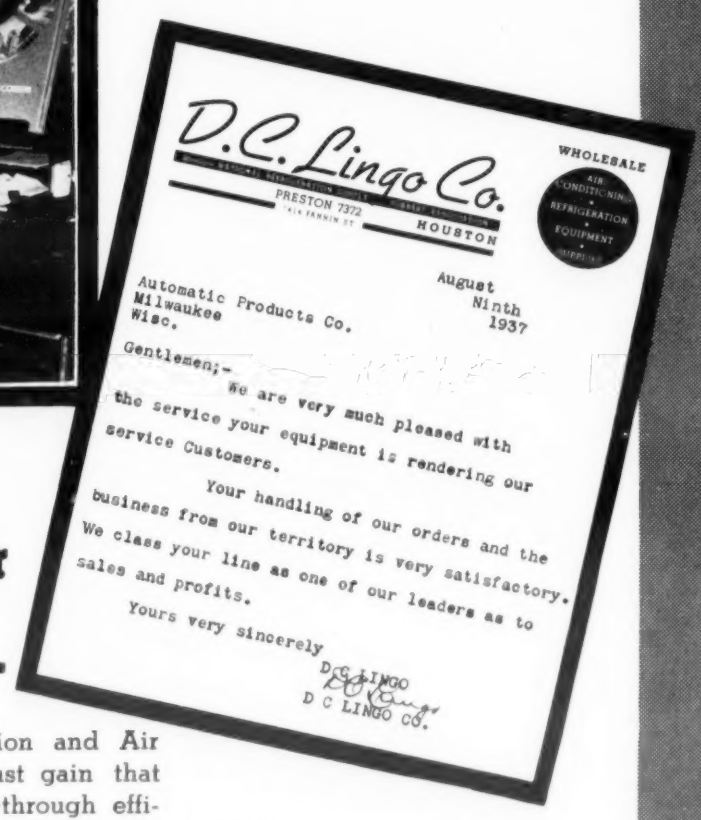
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August Ninth 1937

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Gentlemen;-

We are very much pleased with the service your equipment is rendering our service Customers.

Your handling of our orders and the business from our territory is very satisfactory. We class your line as one of our leaders as to sales and profits.

Yours very sincerely
D C LINGO
D C LINGO CO.

Go to Your Jobber For Your A-P Controls . .

Any "Leader" in Refrigeration and Air Conditioning Equipment must gain that reputation by merit alone—through efficient and satisfactory operation under all conditions.

That A-P Expansion Valves and Solenoids have met and passed that "Merit Test" is evidenced by the enthusiastic acclaim of leading Supply Jobbers and Engineers responsible for important installations in all parts of the country

Proof of perfect performance is assured in every A-P Control long before it leaves the factory Dozens of tests and inspections covering raw materials, assembly and operation chalk up that 100% demanded by A-P's well-known Precision Standard Your "Control" job is always safe with A-P on the specifications

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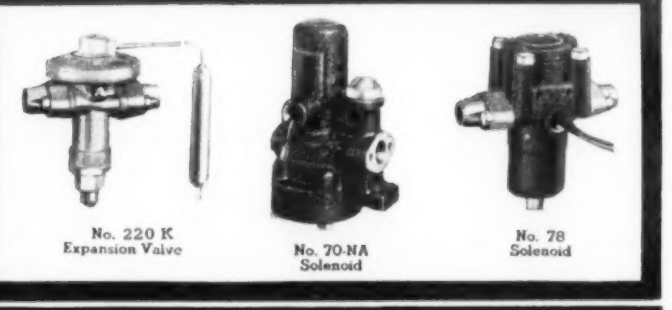
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'Throat Cutting' and Cowardly Salesmen Cut Air Conditioning Profits, E. D. Malone Finds

SIOUX CITY, Iowa—A "cowardly" attitude on the part of salesmen towards prospects, the failure to educate the public to an understanding of *true* air conditioning, and "throat cutting" among competing dealers.

Those are the three main barriers to a dealer's profit in air conditioning, believes E. D. Malone, co-partner in the Malone & Moles distributorship which handles air-conditioning equipment in a market comprised of 28 counties in Iowa, 39 counties in Nebraska, 16 in Minnesota, and for about three-fourths of all South Dakota. Mr. Malone manages the air-conditioning division of the distributorship.

NO-PROFIT JOBS

Enlarging on his expression for undesirable and unprofitable trade practices, Mr. Malone said:

"There are too many **advertising** jobs being done—jobs that are installed for cost, just so the dealer will be able to point out samples of his work to a prospect."

Mr. Malone claimed that his firm did not find it necessary to cut prices to get business.

"Many of the contracts that we have secured were ones on which our firm was the highest bidder. Probably we have lost some contracts to low bidders, but we don't believe in putting our price down and losing our profit. We're not in the business just for the fun of it."

Though admitting that sales had proved "a little slower" this year than last, the failure of the 1936 corn crop in this area being largely to blame, Mr. Malone declared that during the first seven months of 1937 his firm had installed about 490 tons of air conditioning in its territory.

Prices for these installations, he said, have averaged about $250 per ton—which would indicate a total dollar volume for the period of more than $100,000. Mr. Malone added that the firm expected to sell about 700 additional tons before the end of 1937.

Midwest Distributor

E. D. MALONE
"Most salesmen are cowards."

Another trouble with selling air conditioning, claimed Mr. Malone, is the sales techniques most dealers use.

COWARDLY SALESMEN

"The public is selling us," he said, "not we the public. Most salesmen are cowards. The public makes fools of them—forcing them to cut prices unreasonably. This same situation existed in the refrigeration business in Sioux Falls, S. D., when I first went there as regional manager for the Frigidaire branch there."

Then he went on to tell of his experiences, the point of the story being that through a little cooperation and firm resolve among dealers, price cutting was stopped. Moreover, sales increased.

STUDY THE PROSPECT

The way to sell a prospect an air-conditioning system, he explained, is to find out all about that prospect—his likes and dislikes, his hobbies, and his financial status ("Be sure he can afford to buy before you sell him")—then call on him. Mr. Malone defined a prospect as a man with both the **need** and the **money.**

As soon as the salesman can get an audience with the prospect, he should tell him about the advantages that air conditioning will provide.

"Of course, the salesman must be careful not to bother the prospect when he is obviously in an owly mood. If he's owly, you can't do anything with him, and can do nothing better than get out just as quick as you can. But you can come back again—providing you get out before he orders you out."

FIRST INTERVIEW

The mere fact that the prospect appears to be busy, however, shouldn't scare the salesman, according to Mr. Malone.

"After all, the prospect to whom a big sale can be made is apt to be busy. That's how he made his money. You can tell him you have something that you believe is important to him and should interest him. Then ask him for, say, 10 minutes of his time—and if you've made a good impression you'll probably get it. If he simply can't spare the time then, make an appointment.

"Supposing the salesman gets 10 minutes. In that case he should keep an eye on his watch and not run overtime. If the prospect is sufficiently interested when the time is up, he will ask you to stay. Otherwise you leave, thanking him and telling him that you will be back again."

One of the prospect's first questions, explained Mr. Malone, will be about how much air conditioning would cost him. Best answer in such situations is:

" 'Before I can tell that I must find out all about the place to be conditioned. I'll do that if you're really enough interested.' "

CONTINUED STORY

Main part of the sales technique to follow, according to Mr. Malone, is the making of calls; and the secret of doing this correctly is to have a new and interesting fact to tell each time. It is well to leave out many important things on purpose during the first calls. And it is well to end each call on a new subject just as the prospect is getting interested in it.

"Like a continued story that breaks off at the interesting moment."

Of course, Mr. Malone directed, each call should also review some of the information that has already been given—to let it have a chance to sink in.

"On the fourth call you should know whether to keep on with a prospect or give him up as a bad job. You should be able to tell by that time. If you think you are eventually going to sell him, keep on. It takes an average of about six calls to sell a good prospect an air-conditioning system.

"Of course, you should make sure at the very first whether or not he is a real prospect. The world is full of **suspects,** but there's no use wasting time on them, especially if they haven't got the money anyway."

Merchandising Air Conditioning in a Typical Midwestern Area

How air-conditioning equipment is merchandised in a typical midwestern area is told in this interview with E. D. Malone, partner in the Malone & Moles distributorship with headquarters at Sioux City, Iowa. This is the second in a series of interviews with dealers about the "profit problem" in air conditioning, begun last week in the NEWS.

In this interview, Mr. Malone expresses the view that air-conditioning dealers are selling too many no-profit jobs just for their "advertising value," and tells how dealer cooperation helps maintain a profitable price level.

Mr. Malone goes on to tell of his own sales technique, and describes how his company has met such universal and varied problems as finding salesmen, proper compensation for salesmen, engineering, financing, advertising, and servicing.

SALESMEN AND SALARIES

Malone & Moles has three salesmen in Sioux City and four outside in the balance of the counties that make up its territory. Average amount paid out to each salesman, according to Mr. Malone, is about $400 per month.

The salary of each salesman is figured either of two ways: (1) straight commission, (2) straight salary with traveling expenses. Choice of which system he will work under is up to the individual salesman, but he must make up his mind at the first of each year and stick to it throughout the next 12 months. Most of the firm's salesmen, added Mr. Malone, prefer to work for the straight commission.

Those working on commission are paid 40% of the gross list price of the equipment going into any job they sell. Out of this amount, however, the salesman is required to hand over 40% to the engineer on the job.

Salaried salesmen receive $250 per month plus traveling expenses. Their expenses are apt to run well over $100, however, thus making the salaried man cost the company about the estimated average of $400.

TYPES OF SALESMEN

At this point in the interview, Mr. Malone went into an interesting digression regarding his view on the types of men that make good salesmen. These views were based on his many years of sales managing experience in both the refrigeration and air-conditioning fields.

"All successful salesmen," he said, "can be divided into five distinct types. The types don't overlap. And when you once know them, you can go to a big sales convention and instantly classify the boys you see there according to the class in which they fall.

"The first type is the slicker. He's always well-dressed and quick-witted. He'll lie or do anything else necessary to get a sale, and he sells lots of stuff. He's apt to be at the top of the sales staff every month, but he'll only last a year or two in any one location. Then he moves on. At a convention you'll see these fellows get together off in a corner by themselves, but they'd cut each other's throat to get a sale.

"The poorly dressed, energetic type is No. 2. He sells by sheer energy and hard work. He can't take time to comb his hair or keep his tie straight, and he'll dissipate lots of his energy uselessly. But by his enthusiasm and the great number of contacts he makes, he'll bring back sales.

"Then there's the slow, methodical type. He works hard too, but he plans everything out as he goes. And his careful planning shows results in the long run.

"Type No. 4 is the intellectual salesman. He knows all about his product, and he talks for hours about technicalities that most prospects don't understand. But many people are impressed by his knowledge, put faith in him accordingly, and buy from him.

"Last type is the personality boy. He hands the prospect his card, fraternizes with him, and only incidentally ever gets around to the product he is selling. Yet he's apt to be the best salesman of the whole lot."

SALES QUALIFICATIONS

Queried as to where the firm secured salesmen for air conditioning, Mr. Malone said the most of them had formerly sold commercial refrigeration.

Asked whether they were engineers or not themselves, he answered in the negative, but said that most of them were able to make off-the-cuff estimates when necessary.

"In a pinch, some of them could do part of the engineering themselves, but they are always supervised by one of the regular engineers.

"They have to know some of the fundamentals, of course, and once we started offering them a formal course in the subject. But we stopped that, because with their experience in commercial refrigeration as a background, we find that they soon pick up what they need to know."

ENGINEERING AND SERVICE

The firm maintains about one engineer for each salesman, Mr. Malone claimed, though only two engineers (himself and R. E. Blinn) take care of the three city salesmen. Each engineer, he said, does his own drafting.

Air-conditioning service men, said Mr. Malone, are found in the ranks of experienced heating and refrigeration service men, the latter usually being the best.

A good refrigeration service man, he said, can be made into a good air-conditioning man by teaching him the use of the Carrier manual and giving him the experience of helping to install about three conditioning systems.

ESTIMATING COSTS

Annual profit of the firm, Mr. Malone declared, is based on the difference between the net and list prices of the equipment used in installations. Costs of sublet installation work and other expenses are covered by special markups. These are figured for the individual job on a worksheet.

Complete price of an installation is determined on this worksheet in the following way:

First, the total list price of all Carrier equipment to go into the job is set down. Using this sum as a basis, 3% is added to cover the installing done by the firm, another 3% (15% for out-of-town installa-

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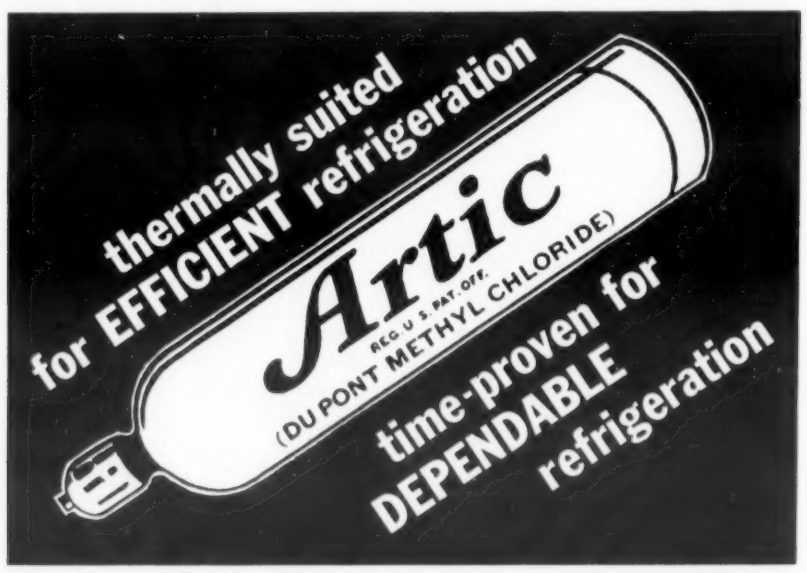

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Service men find it pays to recharge Methyl units with ARTIC, for they are sure of a highly pure product, low in moisture and acidity.

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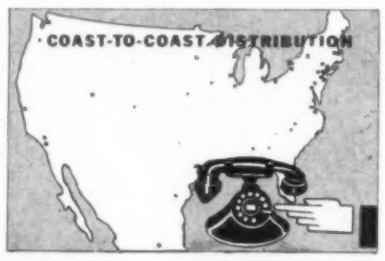

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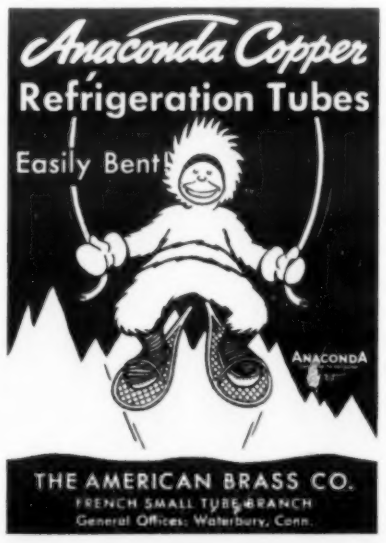

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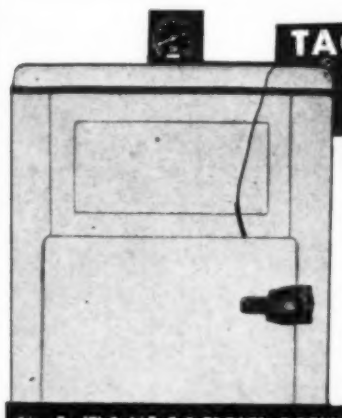


TAG DIAL THERMOMETERS GIVE COMPARTMENT TEMPERATURE AT A GLANCE . . . . . .

Convince that "hard to sell" customer the "easy TAG Dial Way"—Just place the bulb in the food compartment or on the evaporator coils—set the dial on top of the box as illustrated—close door—then watch the pointer—it will move almost as fast as the second hand of your watch. Within a minute the true temperature will be indicated accurately for all to see. You need this instrument in your service and sales work. Get the information today. Write for Catalog No. 1136-25.

ASK YOUR JOBBER ABOUT TAG CONTROLS AND TEST EQUIPMENT

C. J. TAGLIABUE MFG. CO. 550 PARK AVE. BKLYN. N.Y.

Named to New Posts in Kelvinator Commercial Dept.

J. K. KNIGHTON

H. M. McGAUGHEY

L. T. M. RALSTON

As a result of expansion of the Kelvinator commercial department, these three men take over new posts. Mr. Knighton, formerly sales manager of the commercial air-conditioning department, becomes eastern sales manager for that division; Mr. McGaughey, formerly assistant sales manager, is named sales head in the commercial air-conditioning department; and Mr. Ralston vacates the post taken by Mr. Knighton to head a new commercial division in the east, headquarters for which have not been announced.

Malone Finds Plain Outside Canvassing Best Air-Conditioning Prospect Getter

(*Concluded from Page 6, Column 5*)

tions) to provide a service reserve, and to this is added the cost of transporting the equipment and the cost (marked up 25%) of all sublet installation work.

Sublet are the following: electrical work, plumbing, steam fitting, duct-work, structural bracing or enclosures for equipment, the cutting through of partitions etc., and painting and decorating.

The 25% markup on the actual cost of this work, said Mr. Malone, is to cover the supervision necessary and the responsibility involved.

SERVICE DIFFICULTIES

One of the biggest problems in trying to sell air conditioning, declared Mr. Malone, is the service problem.

"Because other dealers offer one year of free service, we have to also. If we didn't, the public might think our equipment was worse than other kinds, and that we were afraid to back it up with the same guarantee the rest give. We protect ourselves, however, by adding 15% to the total list price of the equipment on out-of-town jobs and 3% on local ones.

"Most of the time we go out on service calls only to find that there's nothing the matter. We have one customer 150 miles away who has called us out to his place eight times in the last year because he imagined there was a leak in his refrigerant line. And there are a lot of people like that. Air conditioning is new to them and they're still afraid of it.

"Now let's take another example:

"Here comes a cool night in hot weather. The owner shuts his machinery off accordingly. Then the next morning, when his house starts to warm up, he turns it on again, and the sudden load it has to carry makes its operation a little noisy.

"Well, he goes into a panic and calls us to come down in a hurry. By the time we get there—it may be 250 miles away—the system is operating properly again. Of course, he just didn't understand how to use his system. But such a trip costs us a lot of money.

"More solenoids in the original installation, of course, would have tended to make the system operate quietly regardless of the owner's poor management of it, but he didn't want to pay for the extra controls. Sometimes we persuade him to put them in later."

ADVERTISING BUDGET

At the beginning of the year, explained Mr. Malone, a rough estimate of coming business is made. It is based conservatively on the past year's volume, and the amount can be increased as the year shows promise of exceeding expectations.

Direct use of this projected volume, however, is chiefly to determine the sum to be spent for advertising, most other running expenses being taken care of by the job—by use of the worksheet already explained.

About 3% of the gross income from anticipated business is devoted to sales promotion. Of this amount, about 70% is spent on direct mail, 15% on newspaper advertising, and another 15% on radio spot announcements.

During the summer, one radio spot was used each day at 8:45 a.m., immediately preceding the market report.

Most effective of these methods, thinks Mr. Malone, is direct mail. The mailing pieces, being quite expensive, are not broadcast indiscriminately. Literature for portable conditioners, however, is much more widely circulated than that for central systems.

PLAIN CANVASSING BEST

"What really gets the most prospects is plain outside canvassing. We go to the theaters, the stores, and the offices of professional men."

Also, much "spotting" is done by cooperating heating dealers in the city and out in the territory. Many residential installations are sold through such spotting.

Way in which this sort of sale is handled is to let the heating man take the air-conditioning contract while the distributor supervises the work. Of the list price of the equipment, the heating dealer gets 20%, and after the installation is complete, the dealer takes over the servicing of the heating functions.

FINANCING ARRANGEMENT

With respect to financing of sales, Mr. Malone declared emphatically that a minimum down payment of 20% was always required. The minimum might be stepped up to 50% in individual cases, depending on the credit rating of the buyer. And on a job of $10,000 or more, he said, only sales on a cash basis were considered.

Down payments, he said, are paid in halves. The first half is required with the order, the second when the equipment arrives. Financing is done through the C.I.T. or a local bank.

When the full amount of the sales price is paid with the order, a 2% reduction is made to the buyer.

Cash sales are handled thus: 10% of the price is paid with the order, 50% after the equipment has arrived and before it is unloaded (the bills of lading being shown the buyer), 25% on erection of the air-conditioning plant, and the remaining 15% when the system is ready to go.

SALES ARGUMENTS

"Comfort" is the best sales argument for residential systems, pointed out Mr. Malone, while for commercial installations there are two.

"The first of these is the very best argument in the world for selling anything—increased business.

"The second argument naturally follows the first. It applies when the market begins to become saturated. It is: 'Air conditioning is now a necessity. If you **don't** air condition **your** store **too,** you'll lose all your business to your competitors.' "

MOLES ASKS EDUCATION

E. B. Moles, partner of Mr. Malone, has little to do with the company's air-conditioning business, but he had some rather potent comments on the subject.

"You know and I know that anything which would help the public really understand what air conditioning is would benefit the industry enormously. It would keep people from accepting makeshifts for the real thing."

Two factors, Moles thought, contributed largely to the sales resistance of the public. One was the belief that present equipment would become obsolete in a few years. The other was the cost.

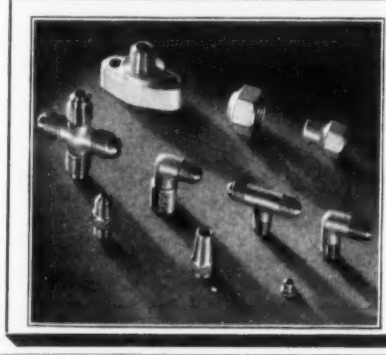
"The average residence owner is overwhelmed when you tell him that a system will cost him $1,500 or $2,500. It's out of balance to the cost of his home."

The only way to lower the price of air conditioning, according to Mr. Moles, is to build bigger unit coolers—up to 10-tons capacity perhaps. If this were done, prices could be reduced because: (1) installation costs would be low, and (2) the engineering expense might be eliminated altogether.

LEARNED BY CORRESPONDENCE

One of the firm's two air-conditioning engineers, R. E. Blinn, declared that a correspondence course had helped him enter the air-conditioning field. Formerly he was a mechanical engineer, who had done construction and tool shop work, and later got some experience in making heating installations.

What he didn't know, Mr. Blinn explained, the Carrier manual did. It had everything in it, he said, but declared that learning how to use it correctly was most important.



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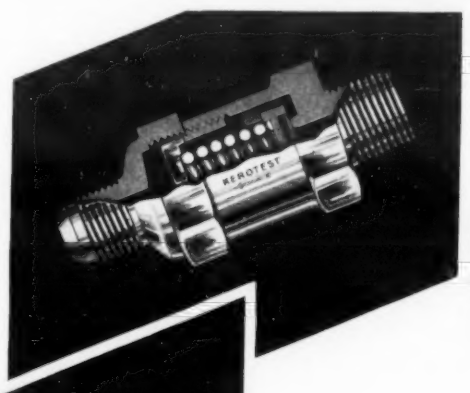
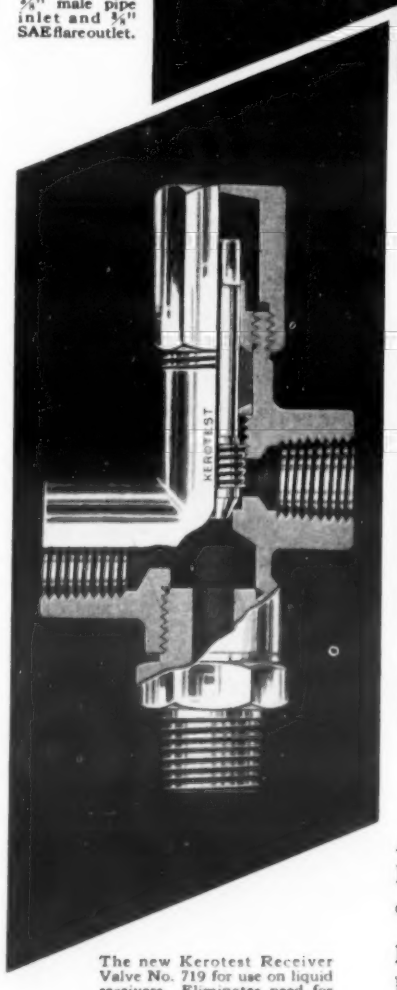


The new Kerotest Automatic Pressure Relief Valve No. 40 meets many municipal safety codes. Available with ¼" or ⅜" male pipe inlet and ⅜" SAE flare outlet.



The new Kerotest Receiver Valve No. 719 for use on liquid receivers. Eliminates need for separate connection for safety devices.

KEEPING ABREAST OF THE NEW SAFETY CODES NOW IN EFFECT!

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SAFETY VALVES & FITTINGS

• The inherent nature of modern refrigerants . . . their susceptibility to heat and temperature changes and the resultant dangerous pressures that are sometimes developed make adequate safety measures imperative.

Anticipating the many municipal safety codes now in effect, Kerotest has developed a complete line of automatic pressure relief valves, each one designed to do a definite job well.

Prominent among these new Safety Valves is the Kerotest Receiver Valve No. 719 and the new Kerotest Automatic Relief Valve No. 40 illustrated. As you will note the receiver valve is designed with a safety connection below the valve seat for use on liquid receivers. This permits attachment of safety device directly to the valve . . . eliminates the need of a separate connection for safety devices and provides a permanent connection which is independent of the position of the valve stem.

Used in conjunction with the Kerotest Automatic Pressure Relief Valve No. 40, the requirements of many municipal safety codes are met which makes it unnecessary to install safety devices elsewhere in the system. This is typical of the many Kerotest Safety Valves now available through Kerotest Jobbers in every important industrial center.

KEROTEST

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

Anaconda Copper
REFRIGERATION TUBES
They Flare without cracking
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE Branch
General Offices: Waterbury, Conn.

COMMERCIAL NEWS

Compliment Paves Way to Order from Salem, Ill. Hotel

SALEM, Ill.—A compliment and a polite introductory remark were used by E. E. Barbee, St. Louis branch manager of McCray Refrigerator Co., to pave the way for sale of some new refrigeration equipment to the Park hotel here.

Mr. Barbee stopped at this hotel for supper one evening. As he paid his bill he complimented the proprietor on the quality of the meal which the hotel had served him. He followed this opening by remarking that "our business is furnishing the food-preserving equipment which makes such fine meals possible."

When, in reply to the hotel proprietor's query, Mr. Barbee said that he handled McCray equipment, the proprietor countered by saying that a large McCray refrigerator was being used in his hotel's kitchen.

Mr. Barbee asked and received permission to look this machine over. Upon examination, he found that the machine was of the old ammonia type, that the gaskets were in poor condition, and that the system was not operating at all economically. He than went to his car for his sales kit, and in half an hour the proprietor had signed an order for a new refrigerating machine, coil, valve, and door gasket.

Moral of this sales story, according to Mr. Barbee, is that "we drive by more prospects than we call on."

Mobile to Have New State Qu'ck-Freezing Plant

MOBILE, Ala.—Simultaneous with the dedication of Alabama's $880,000 cold storage plant and fruit terminal here, the State Docks commission announced plans for erection of a new quick freezer unit with a capacity of 5,000,000 lbs. of fish, fruits, and vegetables.

McCray Wins Special Order

ATLANTA, Ga. — Atlantic Steel Co. has placed an order with McCray Refrigerator Co. for a special refrigerator to be used in the company's industrial cafeteria.

Schaefer Trailer to Display Equipment In South & West

MINNEAPOLIS — An automobile trailer equipped with a representative display of products made by Harold L. Schaefer Co., manufacturer of commercial refrigeration and air-conditioning equipment, is being taken on a tour of the United States by G. E. Berres, Schaefer Co.'s vice president in charge of sales.

According to his itinerary, Mr. Berres will travel southward from Minneapolis through Texas and Missouri, continuing on to the National Dairy Convention in New Orleans where he will display the trailer from Oct. 21 to 27.

When he returns from his southern trip, Mr. Berres plans to take the trailer to the west coast.

The product display in the trailer includes a complete soda fountain and an eight-hole ice cream cabinet. The trailer also carries a Schaefer air-conditioning unit which is in actual operation, an operating compressor unit, two electric heating units, and two electric fans.

On the walls are framed photographs of recent Schaefer installations throughout the country. In the rear window the name "Schaefer" is formed of copper tubing, which becomes covered with frost when the demonstrating compressor is in operation.

Refrigerated Truck Boosts Meat Wholesaler's Volume

CHICAGO — Increased volume of sales and new customers has followed the purchase by L. Jarecki, wholesale meat dealer, of a streamlined refrigerator truck, according to F. B. Platt of the Erlinder-Platt Sales Corp., builder of the body.

The body is 12 feet long, 72 inches wide and 66 inches high. It is maintained at a temperature of 40° F. by Dole plates hooked up with a mechanical unit furnished by the Burge Ice Machine Co.

Dry-Zero insulation is used throughout, with 4 inches in the roof, 3 inches in sides and ends, and 2 inches in the floor. Access to the interior is provided by doors on the curb side and in the rear.

Frick to Equip New Fish Storage Pier At Gloucester

GLOUCESTER, Mass.—Frick Co., Inc., has been awarded the contract for the refrigerating equipment to be installed in the new million-dollar fish pier which will be constructed here soon.

In the four-story cold storage building which will be built on the 550-foot pier there will be storage capacity for 5,000,000 lbs. of frozen fish.

Freezers in the storage plant will accommodate 250,000 lbs. of fish per day, and the six freezer rooms will be equipped with refrigerating machinery which will produce temperatures as low as —25° F.

Two of the freezer rooms will be equipped with shelf or bench refrigerating coils, and the other four will have air blast equipment designed for freezing packaged fillets.

The 10 main storage rooms will maintain an average temperature of 0° F. Two ice-making tanks will produce a total of 50 tons of ice daily.

Refrigerating machinery will operate on the two-stage or "booster" ammonia system. Coils in the low temperature rooms will be connected to a pair of Frick 15 x 10 booster compressors.

Four Frick 10 x 10 ammonia compressors, aided by an 8 x 8 machine, will handle the discharge from the booster compressors and the suction gas from the ice-making tanks.

All compressors will be driven by direct-connected synchronous motors.

Frick refrigerating equipment also will be installed in the nine fish dealers' stores to be housed in a building adjacent to the storage building.

Total lengths of the 1-inch, 1¼-inch, and 2-inch piping to be used in all the coils in the entire refrigeration installation will be 26,000 feet, 36,400 feet, and 13,600 feet respectively.

Fay, Spofford, & Thorndyke of the construction of the pier, and the project is being jointly financed by the Commonwealth of Massachusetts and the Federal Public Works Administration.

Samples of Frosted Foods Climax Student Lecture

NEW YORK CITY—A taste of various frosted foods packed by Honor Brand Frosted Foods Corp. climaxed the lecture given to 65 women students of Columbia university's department of institution managers by Horace Wainwright, authority on world produce.

Speaking in the offices of Waterman & Co., distributor for Honor Brand foods, Mr. Wainwright discussed the characteristics and sources of various types of fruits and vegetables. He illustrated his lecture with actual produce.

Sherer-Gillett 'Vegetaire' Installation

Twelve-foot Sherer-Gillett "Vegetaire" refrigerated display case installed in a Detroit market, one of the first installations in that area. Specifications of the equipment are given in the accompanying story.

Beverage Cooling Best Market, Reinach Says

DETROIT—Greatest market for electric refrigeration equipment today, in the opinion of A. H. Reinach, sales manager of the standard commercial and liquid cooling department of Kelvinator division, Nash-Kelvinator Corp., lies in the electric beverage-cooling field.

Declaring the beverage cooler business to be an industry with only 100,000 prospects sold and with 3,400,000 prospects yet to go, Mr. Reinach pictures retailers as turning to electric refrigeration for less expensive, more satisfactory cooling.

Eyeing the increasing sales of bottled beverages and the recent improvements in beverage coolers, Mr. Reinach predicts a great expansion in beverage cooler sales in 1938.

Fort Dodge Norge Outlet Equips New Market

FORT DODGE, Iowa — Coolers, cases, refrigerating units, and porcelain work in the California Market here were installed by The Adams Wholesalers, Waterloo, Iowa, Norge distributor. Paul Read, commercial supervisor, made the sale.

Two meat cases in this market are held at 39° F. four inches above the main shelf and at 43° F. on the mezzanine shelf by a model NA-50 Norge condensing unit. A 10-ft. delicatessen case is held at 42° F. four inches above the main shelf and at 45° F. on the mezzanine shelf by an XNA-33 unit.

A 10 x 10 x 9-ft. meat cooler with overhead coils is held at 38° F. by a NA-75 machine, and another walk-in cooler for vegetables and fruits is maintained at a high relative humidity and a temperature of 45° F. by a second NA-75 unit.

Sherer-Gillett Produce Case Installed for Detroit Market

DETROIT—One of the first local installations of Sherer-Gillett Co.'s new "Vegetaire" refrigerated produce case was made recently by The Refrigeration Sales Corp., Detroit representative of the Marshall, Mich. display equipment manufacturer, in the market of J. T. Assemany and B. Howard, 13142 Fenkell Ave.

Operating on a 1½-hp. Frigidaire commercial compressor installed in the basement of the store, the "Vegetaire" case consists of a combined 12-foot double-duty refrigerator display case for produce which perishes quickly, an open storage and display compartment for more lasting produce, and a 6-foot refrigerated fish case.

The "Vegetaire" was first introduced a little over a year ago, being tried out in several markets in Indianapolis.

There are six styles of "Vegetaires" ranging in length from 7 to 12 feet, all with overall heights of 6 feet and overall widths of 3 feet.

Specifications are as follows:

Style	Length	Shelf Area	Cubical Content
UL 1212	12 ft.	103 sq. ft.	153.5 cu. ft.
1212	12 ft.	74 sq. ft.	96 cu. ft.
UL 1210	10 ft.	85 sq. ft.	127.5 cu. ft.
1210	10 ft.	61 sq. ft.	80 cu. ft.
UL 1207	7 ft.	43 sq. ft.	56 cu. ft.
1207	7 ft.	60 sq. ft.	89 cu. ft.

Special Equipment Cuts Costs for Fish Dealer

SCHENECTADY — Cutting his refrigeration bill for a five-week period from $80 for ice to $8 for electric current is one of the savings which the proprietor of a fish market here has made since he purchased electric refrigeration equipment from M. Cimorelli, local General Electric commercial refrigeration dealer.

Although the G-E standard commercial refrigeration equipment line did not have equipment for this purpose, the installation for the fish market included a Victor F-120 dry-storage milk-cooling cabinet with brine tank, connected to a ½-hp. G-E condensing unit.

Citrus Storage Plant under Construction in Phoenix

PHOENIX, Ariz.—Construction of a $200,000 cold storage plant for the Arizona Citrus Growers was started here recently.

Holmes and Narver, Los Angeles, are consulting engineers, and Clinton Campbell of Phoenix is general contractor.

HILL REFRIGERATORS ARE EASIER TO SELL

THE new Hill line of *improved* Reach-in Refrigerators for restaurants, hotels, institutions, hospitals and bakeries is easier to sell because better made—and noticeably so. The low conductivity corkboard insulation is thicker, the interior and exterior are genuine porcelain, the hardware is of special design, the coils are more easily reached, the proportions are more graceful, and the refrigeration is better.

Send for 32-page illustrated catalog, describing outstanding HILL features and listing complete specifications.

Hill Products Division
C. V. HILL & CO., Inc., TRENTON, N. J.

NEW IDEAS IN DOORS
—make modern display refrigerating more modern!

"Unbelievable!" That's what manufacturers say when they examine the engineering features of the new "Loxit" door units, (doors — rails — jambs), they realize suddenly that LOXIT COSTS NO MORE THAN ORDINARY DOORS.

Consider, for example, these Loxit improvements: 1. *Locked-in, lift-out doors.* 2. *Tightly-closed overlap.* 3. *Reduced air leakage.* 4. *Lighter weight.* 5. *Greater structural strength.* 6. *Roller bearings.* 7. *Shock absorbing jambs.* 8. *Quiet closure.* No wonder "Loxit" doors have such enthusiastic preference.

Wide Range of Sizes

Ace "Loxit" Hard Rubber Door Units (doors, rails, jambs) are made in many sizes to fit regular display cabinet types. Storage and service doors, glazing strips, trim, etc. Manufacturers: write for details and prices. American Hard Rubber Co., 11 Mercer Street, New York, N.Y.; 111 West Washington Street, Chicago, Ill.; or Akron, Ohio.

ACE "LOXIT" PATENTED DOORS

VIRGINIA SMELTING CO.
WEST NORFOLK VIRGINIA
EXTRA DRY
ESOTOO
LIQUID SULPHUR DIOXIDE
V-METH-L
VIRGINIA METHYL CHLORIDE
131 State St. Boston—76 Beaver St. New York

THE AIR AGE

BY F. O. JORDAN

'Air Conditioning Made Easy' in Manual Form

West Hill
Herkimer, N. Y.

Gentlemen:

The writer has been a subscriber to your periodical since June 16 and has found it to be a very much alive and interesting trade paper.

I have followed with especial interest the articles by F. O. Jordan on "Air Conditioning Made Easy," and would be interested to know whether these articles have been combined into book or pamphlet form and if they have I would like to know where a copy of the book may be purchased.

In the event that this book is not as yet published, please send me the first two issues which contained these articles, i.e., Sept. 23 and Sept. 30, 1936.

It would also be greatly appreciated if Mr. Jordan would indicate his preference to some particular text on Thermodynamics as being particularly adapted as reference for an air-conditioning engineer.

R. H. SCOBELL

Answer: We are gratified to learn that the service of AIR CONDITIONING AND REFRIGERATION NEWS as the weekly "newspaper of the industry" (rather than another monthly trade journal) has helped you to find it "to be a very much alive and interesting" paper.

As to your inquiry regarding the "Air Conditioning Made Easy" series of articles which has been running in the NEWS for the past year, the text of the articles has been revised and considerably extended for publication in book form.

The first book of the series, designated Manual A-1—price $1 per copy, is now ready for delivery and other manuals are in production.

MANUAL A-1 CONTENTS

Manual No. A-1 deals principally with the **summer** phase of air conditioning, and contains the following chapters:

(1) What is Air Conditioning?
(2) Typical Air Conditioning Systems.
(3) Refrigeration Cycles.
(4) Performance of Heat Transfer Surfaces.
(5) Condensing Unit Performance.
(6) Summer Air-Conditioning Systems.

The purpose of Manual A-1 is to present the elements necessary for a complete understanding of the subject, together with explanations and discussions of fundamentals and of typical methods and systems. Definitions and various data tables are given in appendices in the back of the book.

Relatively little of the text matter of Manual No. A-1 has been published in the articles which have appeared in the NEWS.

WINTER FUNDAMENTALS

The purpose of Manual A-2, which will be ready very soon, is to present explanations of the elements and fundamentals of **winter** air conditioning. In this manual, designs and practices in use with the various types of heating systems are discussed.

Subsequent manuals (three or four in number) will cover the design, development, testing, and manufacture of air-conditioning equipment, field (or application) and installation engineering for all types of air conditioning, distribution systems, noise control, etc.

In each manual is published in abridged form, the data tables and charts pertaining to the subject matter in that particular manual. In addition to such data, complete **unabridged** data tables, charts, and equations will be compiled in a separate reference book for the use of the engineer.

REFERENCE MANUAL

The reference manual will also contain chapters covering the mathematics, physics, thermodynamics, principles of refrigeration, principles of electricity, hydraulics, etc., necessary for the air-conditioning engineer to know. The text of these chapters has been very carefully prepared with the intent of including all of the respective subjects which the air-conditioning engineer actually will use in his daily work, but of excluding material that does not apply to his work.

Many text books are available which deal with mathematics, thermodynamics and other specialized subjects. The difficulty confronting the air-conditioning engineer is that most of the material covered in such text books does not apply to his work, so that he is burdened with the task of studying much extraneous subject matter in order to select the information required.

In the reference manual of Air Conditioning Made Easy, the purpose will be to make life easier for the man who is interested in air conditioning by doing this "weeding out" of irrelevant matter for him, and by including all of the data and information that applies to air conditioning. For this reason we believe that the book will be invaluable to beginners and to experienced engineers alike.

Please note, however, that the reference manual will probably be the last book in the series and that it will not be available for several weeks.

Myers Defends the Consulting Engineer

Westinghouse Electric & Mfg. Co.
246 East Fourth St.,
Mansfield, Ohio

Editor:

I read with a great deal of interest the article by F. O. Jordan, "The Consulting Engineer in Air Conditioning," that appeared in the Aug. 18 issue of your splendid publication.

I haven't the slightest idea who the biggest air-conditioning dealer in Boston was who gave Mr. Jordan the information that he did, but I would say that this dealer has a great deal to learn. Now this may have been our own Distributor, but I doubt it, because he is not the biggest in Boston, but whether it is or isn't, is beside the point.

The distributor referred to has certainly given out some information that, if other publications would follow suit, would be very injurious to the industry in general.

My reaction is, "Yes, sir, the consulting engineer has an important place in Air Conditioning." It is my honest belief, Mr. Taubeneck, that more and more consulting engineers are becoming a very important part of the air-conditioning industry, and I hope that the day is not too distant when the consulting engineer will be the one from whom our dealers and distributors obtain invitations to bid on air-conditioning installations.

When this happens, we can all be assured that installed prices will be more in line than they are at the present time, because all distributors will be asked to bid on certain and definite load calculations, and although the compressor and mechanical equipment of an installation represent a small percentage of the total installed job, the local labor for ducts, piping, wiring, etc., is almost on a given scale.

The ultimate purchaser will then have one thing to decide as to who in the local area has the best facilities to put in a job.

Such concerns as Sears Roebuck, Montgomery Ward, and other large reputable retail concerns, would certainly be in one awful fix if they had to depend upon manufacturers alone, or local dealers alone.

Many of these large installations have been planned and specifications prepared by some of the country's leading consulting engineers, and this has relieved the manufacturers, as well as local distributors, of many headaches, to the end that when final operating tests were completed the distributor who installed the job, and the ultimate purchaser, were satisfied that the job is as it was to be.

I should very much like to tear this article apart, because I believe many things that have been said are very misleading, and that happens to be one of the serious situation the industry is faced with today.

There is no question in my mind but what a consulting engineer is rapidly becoming a very important factor in the business, and the local distributor or dealer is taking his proper place, because these large buyers, as well as local retail concerns, are demanding that they receive local engineering, local labor, local installation, local servicing, and local selling, and they are rapidly getting away from the idea that to get a best air-conditioning layout is to have the manufacturers, who are supposed to know their business, make the best layout that they know how to make, and then have the local retail purchaser select the best, and I ask you, what does he know about it.

Suppose this is true; the manufacturer is sitting off in New York somewhere, and the job is in Mobile, what does that manufacturer know about local conditions?

There are many things in this article, Mr. Taubeneck, that are not true, and I don't believe that you are interested in taking part in any such controversy.

S. F. MYERS, Manager,
Air Conditioning Sales.

Answer: Your letter to Mr. Taubeneck surprises me because its context sounds as if you interpreted my article on "The Consulting Engineer in Air Conditioning" to be **against** the Consulting Engineer.

Being a registered, practicing, consulting engineer myself, I am **for** the consulting engineer, **not** against him.

If you read the entire article you will find that what it attempts to do is to list some of the common arguments which one keeps hearing against the consulting engineer, and then refute them.

Of course, the article does insist that to be effective, the consulting engineer must actually know the air-conditioning business, and indicated that not **all** of them do.

You say that you would like to "tear this article apart," and that there are many things in it "that are not true" yet you agree with me in saying that the Consulting Engineer has a place in air conditioning rapidly growing more important.

McQUAY McQUAY

Suspended Blower Type

AIR CONDITIONING UNIT

This McQUAY Unit cools, dehumidifies, filters, and circulates the air in Summer; or is designed to heat, humidify, filter, and circulate the air in the Winter . . . Precision built, skillfully engineered . . . Designed for Air Conditioning stores, offices, cafes, theaters, shops, etc. . . . Furnished also in floor type.

An interesting descriptive bulletin is available.

WRITE for New Catalogs on McQUAY Unit Coolers, Comfort Coolers, Cabinet Concealed Radiation, Refrigeration Coils, Ice Cube Makers, Air Conditioning Coils, Blast Coils, Combination Heating and Cooling Units, Suspended and Floor Type Blower Coolers, Cabinet Floor Type Room Coolers, Etc.

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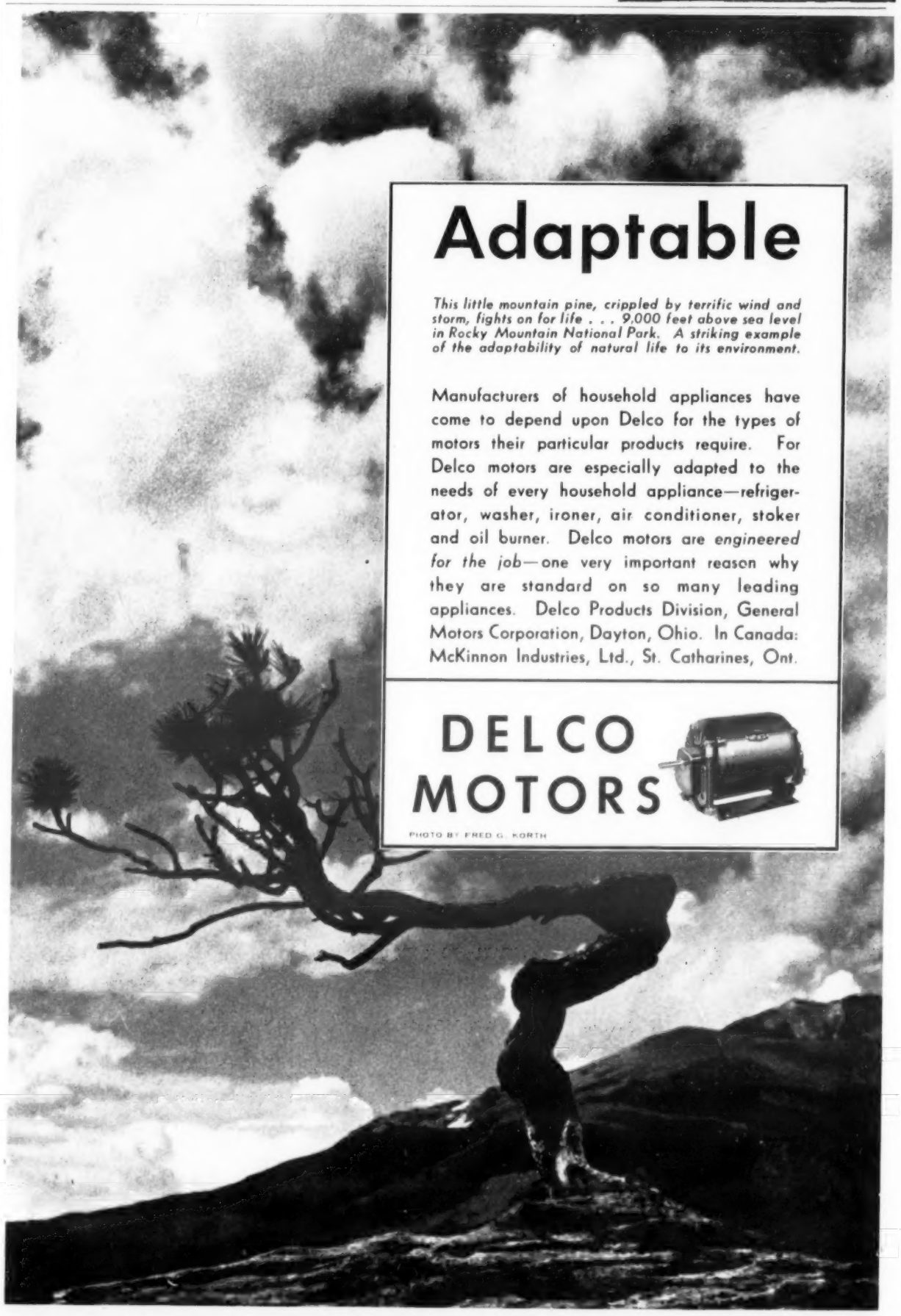

Adaptable

This little mountain pine, crippled by terrific wind and storm, fights on for life . . . 9,000 feet above sea level in Rocky Mountain National Park. A striking example of the adaptability of natural life to its environment.

Manufacturers of household appliances have come to depend upon Delco for the types of motors their particular products require. For Delco motors are especially adapted to the needs of every household appliance—refrigerator, washer, ironer, air conditioner, stoker and oil burner. Delco motors are *engineered for the job*—one very important reason why they are standard on so many leading appliances. Delco Products Division, General Motors Corporation, Dayton, Ohio. In Canada: McKinnon Industries, Ltd., St. Catharines, Ont.

DELCO MOTORS

PHOTO BY FRED G. KORTH

The Distributor Who Sells the

Copeland REFRIGERATION LINE

IS BUILDING GOOD-WILL FOR YEARS TO COME!

It is just good business foresight to sell your customers a quality-built Copeland product. Whether you sell a Copeland Household Refrigerator, Commercial Refrigeration, Washer or Ironer, you are wisely building up a backlog of long-time customer satisfaction that will pay you dividends in continued patronage for many years.

Write for Sales Plan

COPELAND REFRIGERATION CORPORATION
Holden Ave. at Lincoln — Detroit

AIR CONDITIONING AND REFRIGERATION NEWS

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Profits Tax Holds Business Back

IMPARTIAL observers are now pointing out that the recent drop in the value of securities, despite the fact that business indices continue to show a forward trend, is due to the Securities Exchange Act. The irony of this lies in the fact that the Securities legislation was supposed to prevent just such a condition as now prevails.

Probably a better and more concrete example of New Deal legislation that has gone astray is to be found in the case of the undistributed profits tax of 1936. As is well-known, some of the New Deal tax legislation has been written not merely for the purpose of providing revenue for the government, but to further such social causes as "broadening the base of the Nations' wealth," and "helping the little fellow against the big fellow."

New Tax Was Planned to Replace Other Taxes

The original proposal called for the Undistributed Profits Tax to take the place of the established Corporate Income Tax, Excess Profits Tax, and the Capital Stock Tax. Generally speaking, this would have meant that the taxing of business enterprises as such would have been eliminated, and would have shifted the tax emphasis on individual income when earnings were distributed, and on retained earnings otherwise.

If the original idea had been retained, the effects of the legislation upon business might not have been so bad. But Congress, wary of taking a chance on an untried tax measure as a revenue producer, kept the Corporation Income Tax, the Capital Stock Tax, and the Excess Profits Tax, *adding* the Undistributed Profits Tax.

What the Tax Is

The Undistributed Profits Tax puts a tax on that part of adjusted net income which is not distributed. The levy is on a graduated scale, starting with a tax of 7% on the first 10% of net income, and gradually increasing until the last 40% of the undistributed income is taxed 27%, making an average levy of 20.5% if all earnings are retained. This is eased somewhat with respect to corporations with incomes of less than $50,000, in which case the first $5,000 of the retained income is taxed only 7% regardless of what percentage of the total retained income such a sum represents.

The big objection to the Undistributed Profits Tax on the part of business men is that it drains cash from an enterprise—cash that may be very necessary in expanding the business, in getting out from the burden of debts accumulated during the depression, in replacing machinery and equipment that became obsolete in the lean years.

The Case Against The New Law

Proponents of the law point out, in reply, that the law itself provides alternatives to a cash dividend. Distribution of the net income may be made in the form of stock dividends or in any form that is taxable as income to stockholders. But opponents of the tax can come right back with the arguments that:

1. Use of such alternative methods of distribution, particularly with respect to stock dividends, will distort the capital structures of corporations.

2. The technicalities involved in using such alternative forms of distribution of income are likely to impose a greater burden on the small corporation than would the payment of the tax. For one thing, under the Securities Exchange Act it is difficult to get out a stock issue; and also just what forms of stock dividends are taxable and for which the business can get credit seem to be a matter upon which judicial interpretation is not agreed. Furthermore, few of the smaller corporations have stock listed on recognized exchanges, where quotations define the market value, which the law requires.

Postponing Cash Outlay

Another way of conserving cash is through the distribution of earnings in the form of obligations such as short term notes, bonds, scrip, etc. But it is easy to see that in so doing the corporation is merely postponing the problem, and piling up debts so that the problem of the cash outlay will merely be a bigger one when it arrives.

A survey made for *Dun's Review* for September, 1937 of the practices engaged in by 479 corporations last year showed that 86% paid cash dividends only, 9% combined cash and some other form, and 5% used non-cash forms exclusively. It is of interest to note that the non-cash distributions were more frequent among the smaller corporations, which may indicate that they were more in need of the cash.

Ways of Cutting Amount to Be Taxed

There are ways in which the management can cut down the amount that they might be taxed, or avoid excessive drains on the firm's cash. Two main devices are the financing of cash dividends by means of bank loans or some similar measure; and by deliberately increasing expenditures charged to operating expenses.

The latter method was by far the most popular, and such steps were taken by 49% of 618 corporations which reported to the Dun & Bradstreet survey on this point. Salary increases and wage bonuses were the most popular methods of increasing expenditures, with advertising next in popularity, appearing in 13% of the cases, being decidedly higher for small enterprises. It is pointed out by *Dun's Review* that salary increases to owners must be watched lest the Treasury mark them down as unreasonable.

Load on Working Capital Too Heavy

One of the principal complaints lodged against the tax is that the higher volumes of the present recovery stage and the rising prices, inventories, and accounts receivable are putting a back-breaking load on available working capital. Such needs are usually met by increased earnings, which are restricted under the 1936 revenue law.

Current assets such as inventories, investments, and accounts receivable fluctuate widely in many industries with the trend of business and the times, and such assets as may show a profit in one year may never be actually realized at a later date, yet the tax law demands that the management pay in *cash* the profit that has been shown on the books. As *Dun's Review* points out " 'corporate surplus' is merely the residual accounting item which makes assets and liabilities balance. It does not necessarily consist of cash."

One of the chief arguments of proponents of the tax measure is that in the past the disposition of surplus funds have been left in the hands of corporate management without review by its real owners or by the money market. It is declared by those arguing on this ground that our economic system is based upon the theory that the country's resources should be "divvied out" in the money market, and those wishing capital should bid for it against other capital seekers.

However, this is open to criticism (1) because individual investors and investment bankers haven't proved themselves as being so good at allocating capital; (2) the money markets are designed primarily to handle large security issues, and the small enterprise has great difficulty in obtaining capital financing.

Tax Harder on Small Corporations

This leads into the question of whether or not the new tax is harder on the small corporation than the large corporation. The concensus seems to be that it is. The tax prevents that type of industrial growth that comes through "plowing back" earnings. Since a tax must be paid for the privilege of retaining earnings, it puts just that much greater burden on industrial expansion.

"With entire truth it is said that any such curb runs counter to the philosophy by which America has been built, for plowed-back earnings have been a major source of past expansion," declares *Dun's Review*.

"To the extent that it does restrict growth, the Undistributed Profits Tax is a legitimate and consistent member of our present tax family," is the somewhat cynical comment made by the authors of the article.

Reports by banking institutions, statements made to the National Association of Manufacturers, and a Dun & Bradstreet survey have indicated that the smaller corporation has really suffered most.

It seems to be the case of the big ones having arrived and the little ones still struggling. The older and larger corporations with stable earnings are less inclined to reinvest a large part of those earnings than rapidly growing corporations, and corporations with high hopes and prospects.

Tax May Impede Growth of Air-Conditioning Industry

The electric refrigeration and air-conditioning industry falls into the category of a fast-expanding industry. There is little doubt that the growth of many concerns in the industry has been impeded by the gouge in capital which the new tax has made. The tax is bound to leave its impression not only on manufacturing concerns, but on distributors, dealers, and jobbers.

The President not long ago received a report from one of his "economic planning" committees calling attention to the fact that there are several industries which give great promise of carrying the country forward to prosperity in the next decade. Air conditioning was named as one of these industries. But if the New Dealers are really sincere in their statements that they want to encourage such new industries, they had best begin to review the effects of the Undistributed Profits Tax and other legislative measures which are quite apparently retarding the forward march of business.

Like the fictional character that created Frankenstein and was then destroyed by the monster, the men who have been responsible for much of the New Deal legislation must have the uneasy feeling that results of their well-intended but misguided efforts are coming back to haunt them, and perhaps to destroy them politically. It is not only that some parts of the legislative program are failing to accomplish the high purpose for which they were perpetrated, but also that they are actually bringing about results which are just the opposite from those intended.

LETTERS

Jobbers' Progress

Kerotest Mfg. Co.
2525 Liberty Ave., Pittsburgh, Pa.
Sept. 13, 1937.

Dear Mr. Taubeneck:

Let me compliment you on the editorial entitled "Definition of a Jobber," contained in the Sept. 8 issue of your paper.

It is my personal opinion that manufacturers of refrigeration parts and supplies and the jobber industry in general, will subscribe almost 100% to the gospel which you are preaching. The jobbers are looking with alarm on the practice of appointing as competitors, concerns in sparsely populated districts, thereby localizing the jobber market and inducing price cutting or the promotion of products other than refrigeration to distribute his overhead and utilize his facilities.

It certainly is "to the interest of the manufacturer of parts and supplies to protect the legitimate jobber by not appointing any more outlets than are needed to serve each territory properly and profitably."

I share the opinion that the parts and supplies manufacturing industry will be smart to keep their finger on the pulse of the refrigeration industry as a whole and appoint jobbers as the occasion demands, rather than indiscriminately stocking up new appointees to maintain sales near the peak.

The refrigeration parts and supplies jobber has certainly proved of inestimable service to the refrigeration industry, and that industry's general acceptance of the jobber as a necessary and constructive factor is gradually being accomplished and will be a big thing for the jobbers as a whole. Both the jobbers and the parts and supplies manufacturers should promote business practices in the jobbing field which will command the respect of the manufacturers of the mechanical refrigeration units.

The jobbers have a very definite function to perform, and to do this they must acquire the respect, confidence, and acceptance of the mechanical refrigeration industry, from the smallest independent service man to the largest unit manufacturer.

J. S. FORBES, Treasurer.

Kold-Hold for Railways

Kold-Hold Manufacturing Co.
Olds Tower Building
Lansing, Mich.
Sept. 3, 1937.

Editor:

There are two matters pertaining to the Sept. 1 issue which we wish to bring to your attention. On page 16, under the "Question" department we note a query from an engineer in Brazil, regarding refrigerated railway cars. While we do not actually manufacture cars of any kind, we would be interested in furnishing this engineer with information relative to the application of the Kold-Hold cooling system.

Kold-Hold has been applied successfully to small well-insulated cars in India, and it may be that we can be of service along this line.

In the next column of the same department, we note a query on a material called Kilfrost. We have used this preparation ourselves with good results, and it may be obtained in any quantity from an organization in the United States. This information is offered in the hope that it may be useful to you some time in the future. It is marketed in the United States by the International Selling Corp., 26-28 Beaver St., New York City. A letter addressed to B. T. Heffern will bring complete information.

O. D. GREENLEE,
Refrigerating Engineer.

Too Many Company Names

M. E. Stern
Store Fixtures & Butcher Supplies
Virginia Representative
Hill Dry-Cold Refrigeration
500 Market St., Norfolk, Va.
Sept. 11, 1937.

Gentlemen:

We appreciate very much your response to our recent letter concerning the Allied Refrigeration Products Co. of Brooklyn, N. Y. Since our letter to you we have received a letter from the Royal Refrigeration Service, 4756 Third Ave., New York City, signed by A. Arater, advising that the G-E unit had been turned over to them by the Allied for repair and requesting our disposition.

Checking up we find that the New York address of the Allied Refrigeration Products Co. is identical to the address given by the Royal Refrigeration Service, and we wonder if this is a legitimate transfer or camouflage and suggest that you check same up.

This correspondence came to us dated Sept. 7 and we responded on the 8th giving shipping instructions back to us. If, within the next week the unit has not been received, or we have not been advised as to its further disposition, we will be very pleased to advise you.

M. E. STERN.

Answer: When we checked up on Allied Refrigeration Products Co., 1947 Flushing Ave., Brooklyn, N. Y., a few weeks ago there were two signs on the building, namely Allied Refrigeration Products and Metropolitan Refrigeration Service.

We had no previous information regarding the Royal Refrigeration Service, 3756 Third Ave., which, we understand from your letter, is another address for the same location.

We are informed that the layout of the Allied Refrigeration Products Co. is typical of numerous service organizations in the metropolitan area but your experience, and that of others who have written us, together with the multiplicity of names, seems to indicate that the outfit is operating on a catch-as-catch-can basis.

Most Interesting

294 Union St.
Simcoe, Ontario, Canada

Sirs:

I would like to say that I find your paper the most interesting newspaper on the subject of air conditioning that I have been able to discover yet.

A. G. INNES

Advances in Use of Quick Freezing Process Reported at Food Technology Conference

Vitamin Content of Fresh Foods Not Hurt By Quick Freezing, Research Shows

CAMBRIDGE, Mass.—What quick-freezing methods can do in retaining health-giving vitamins in foods was covered in the paper, "The Vitamin A and C Content of Quick Frozen Fruits and Vegetables," presented by G. A. Fitzgerald, chief chemist, Birdseye Laboratories, Boston, and Dr. C. R. Fellers, research professor, Massachusetts State College, at the Food Technology conference held here last week.

Until very recently, according to the report presented, little reliable information has been available on the vitamin values of our common fruits and vegetables. Successful freezing of foods is so new that little research has been conducted on their vitamin content as compared with fresh foods. Steady and increased consumer demands for quick-frozen foods indicate the need for public information as to their nutritive values.

New and rapid chemical methods have made it possible to replace the older rat and guinea pig assays for vitamins A and C, and thus secure the needed information on frozen foods. Results are reported showing the vitamin A and C content of all the common vegetables and fruits both in the fresh state and after quick-freezing by the commercial processes.

Among the fruits and vegetables which are highest in vitamin A (or carotene, as it is called in plants) are spinach, broccoli, carrots, asparagus, squash, green and lima beans, and yellow varieties of sweet corn. Fruits are relatively low in vitamin A but are richer in vitamin C, the anti-scurvy vitamin.

Vegetables are also good sources of vitamin C. Among the best are cabbage, tomatoes, peas, asparagus, sweet peppers, spinach and green lima beans. The fruits highest in vitamin C are citrus fruits, tomatoes, some varieties of apples such as Baldwins, Northern Spys and Red Astrachans, cranberries and strawberries.

Frozen fruits, which are now so widely distributed in this country, retain practically all their original vitamin content. The process of quick-freezing causes little or no injury to the vitamins or other food components. In the case of such vegetables as spinach, broccoli, peas and asparagus, some slight loss in vitamin C occurs during the process incidental to freezing, but on the whole, such quick-frozen vegetables are excellent sources of these vitamins.

New Freezing Methods For Fish Outlined

CAMBRIDGE, Mass.—The extent to which quick-freezing experimentation in connection with the fish industry has evolved new methods was indicated by Prof. Louis Berube, technologist of Maritime Fisheries, Quebec, Canada, in a paper on "Modern Practice in Preservation of Fish by Cold," presented at the Food Technology Conference.

Professor Berube brought out the following points:

Cold has two definite fields in its application to the preservation of fish. The first one is chilling or refrigeration, fish being kept unfrozen until it reaches the consumer. The second one is the freezing or congelation; the fish is frozen hard and kept in such condition until it reaches the retailer or even the consumer himself.

The present fresh fish trade has grown up from the demand of the public for a fish as fresh as "just out of the water," and from the poor quality of the first frozen products 20 or 25 years ago. In the early years of the trade, fish was simply preserved in ice and sent to nearby markets. The development of the trade has demanded shipments to more and more distant markets.

(Concluded on Page 13, Column 1)

Air Distribution Biggest Factor in Food Plant Cooling Systems, Prof. Holt Says

CAMBRIDGE, Mass.—To the food plant operator, an air-conditioning system is only as good as its distribution system, Prof. James Holt of the department of mechanical engineering of Massachusetts Institute of Technology told the Food Technology Conference here last week.

Obtaining good air distribution in a food plant is one of the air-conditioning engineer's most difficult problems, Prof. Holt said, to insure that temperature, humidity, and air motion shall be as nearly the same as possible in all parts of the plant.

In the various food industries, he added, air conditioning is applied for one or more of several reasons:

1. To control the temperature of the product while in storage or during the various stages of manufacture, to prevent spoilage or loss of desirable qualities such as appearance, taste, placticity, etc.

2. Since most foodstuffs are hygroscopic and hence take in or give off moisture until in equilibrium with the surrounding air, it is important to control the moisture content in order to either maintain as nearly as possible the original moisture to prevent loss of weight, or to dry the product during the various stages of manufacture, as required.

3. To clean the air coming in contact with the product.

4. To produce a comfortable and healthful atmosphere in the factory for the benefit of employes.

5. In the retail trade, for the benefit of the customers.

The heat and moisture content of the foodstuffs or enclosure where it is processed, usually is in a continual state of flux, Prof. Holt said. Where air conditioning can be applied, it is the function of the air to remove or supply heat and moisture at the proper rate, to maintain temperature and moisture content at an optimum.

The rate at which sensible heat and moisture with its associated latent heat are removed is dependent upon the temperature, humidity and motion of the air coming in contact with the product, he stated. Since the air must rise in temperature to pick up sensible heat and rise in moisture content to pick up moisture and latent heat, the permissible rise in temperature or change in moisture content, then determines the volume of air which must be supplied to an enclosure.

With meat in cooler storage, Prof. Holt said, the loss of weight at 32° F. is practically three times as great at 85% relative humidity as at 95% relative humidity; and approximately doubled at 10 ft./min. air movement as compared to still air.

On the other hand, for high humidities above 90 or 95%, spoilage due to bacterial action is apt to predominate due to moisture precipitating on the meat when fluctuations of temperature in the room bring the meat below the dewpoint temperature of the air coming in contact with it.

Below 90% relative humidity and fairly constant temperature, the spoilage is predominately due to mold. For relative humidities below 85%, serious loss of weight occurs. As a compromise, commercial practice generally accepts 85 to 90% as the optimum humidity range.

Quick Freezing Holds Vitamin C in Peas

CAMBRIDGE, Mass.—The vitamin C. content of frozen peas was covered in a paper presented by Dr. D. K. Tressler of the New York State Agricultural Experiment Station, Geneva, N. Y., at the M.I.T. Food Technology Conference here last week.

The paper was prepared by Dr. R. R. Jenkins and Dr. Tressler of the New York Agricultural Experiment Station, and Dr. Gerald A. Fitzgerald, chief chemist of the Birdseye Laboratories, Boston.

Chief points made in the paper were as follows:

Freshly picked green peas have long been known to be a good source of the antiscorbutic vitamin C. Previously reported work of other investigators has shown that preservation by drying or canning causes the loss of a considerable amount of the vitamin C content of this vegetable. Similarly, freshly picked peas in the pod held at ordinary room temperature rapidly lose this important nutritive factor and in about a week are found to contain little of it.

Preliminary studies indicated that freshly frozen, hand shelled peas had the same vitamin C content as the freshly harvested product, and that freshly frozen peas which had been put through the usual commercial vining (threshing), washing, blanching (the scalding process necessary to prevent flavor changes), and packaging procedure had lost from 25 to 30% of their content of this vitamin.

(Concluded on Page 13, Column 1)

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THE MODERN INSULATION

Conover Challenges Utilities To Aid Local Associations in Building up Electrical Industry

BEDFORD SPRINGS, Pa.—Hurling a challenge at the public utilities to throw their support behind electrical associations who are trying to present a "united electrical industry front" to the public, George R. Conover, managing director of the Electrical Association of Philadelphia, warned members of the Pennsylvania Electric Association at their recent convention here that failure to help distributors and dealers meet the problems that faced them would mean ultimate disaster to the power companies.

Expressing "surprise" that the power companies had deigned to invite an association manager to address them, Mr. Conover went on to explain the purposes and functions of an electrical association, with specific reference as to how they are operating to meet such problems as price-cutting and excessive trade-ins, and ended his address with a plea for whole-hearted utility cooperation.

Mr. Conover built his talk around the question: "Who sells the kilowatt hour?"

COORDINATION DIFFICULTIES

The complex nature of the electrical industry, considered both nationally and locally, must be taken into account, said Mr. Conover. Any attempt to plan a program of coordination presents more difficulties than would be encountered in practically any other industry, yet the very fundamental reason for the existence of an association is to develop just such a program of constant effort to promote constructive activities.

Only in this way, said Mr. Conover, can an association capture, deserve and hold the support of its membership. This is particularly true of a local association, whose duty it is to both represent and interpret the views of the entire industry; manufacturers, distributors and dealers, as well as contractors and utilities.

Because of their direct or ultimate impact upon the public, the majority of an association's promotional efforts are with the manufacturers, distributors and dealers, the speaker explained.

"Of course, the power company deals directly with the consumer as well, but its functions and operations are so constantly presented to you that I shall ignore them somewhat in order to give the proper amount of importance to the others in the kilowatt hour picture—namely, manufacturer, distributor, contractor, and dealer," said Mr. Conover.

ROLE OF MANUFACTURER

"Let us consider the **Electrical Manufacturer.** It is my honest opinion that not one of us gives a just amount of credit and gratitude to the manufacturer for the gigantic part he has played in the advancement of the electrical industry.

"It is the manufacturer who has developed and perfected all the electrical equipment and appliances in use today, and who continues untiringly to develop new current consuming products. He brought the electric refrigerator through its troublesome and profitless years to the high state of perfection in which we know it today.

"His research laboratories through years of expensive experimentation have given us our present degree of perfection in the electric range, water heater and the numerous other appliances that contribute millions of dollars in sales annually to the industry, together with continued increase in load. He did this as pioneers usually do, largely with his own capital, knowing that somewhere ahead there were profits for all.

"To be sure, all along the line he was aided and encouraged by the farsighted utilities—and much of the latter work was done directly by them; but the perfecting of the product was distinctly a contribution of the manufacturer."

SERVICE OF DISTRIBUTOR

In our complex system of merchandising, caused chiefly by the geographical immensity of our markets, the electrical distributor or wholesaler is as necessary as light and power, Mr. Conover told the utility listeners.

"He serves the manufacturer by spreading the cost of distribution over many lines of merchandise," said the speaker. "He substantially reduces the producer's operating, warehousing and selling costs, **thus making lower appliance prices possible to the consumer.**

"His well-trained sales organization provides an intensive and economic sales coverage and service contacts; simplifies the handling of orders and saves accounting and collection costs. His showrooms provide proper displays of commodities, economical distribution of literature; reduce packing and shipping costs; and through anticipation orders, the distributor levels the dangerous peaks and valleys in the manufacturer's production charts.

"But, greatest of all, **he is a load-builder.** Every working day over 10,000 electrical distributor salesmen in the United States sell great quantities of current consuming electrical appliances and equipment.

UTILITY RETAILING

"Before proceeding with the dealer's part in the kilowatt hour picture, may I be permitted to lay the axe of fact at the root of the old fallacy that the dealer is disturbed by the active selling of merchandise by the utility.

"It is my considered belief that the average dealer has no particular interest in whether or not the utility sells merchandise, so long as a definite policy is maintained which does not aim or tend to destroy his market through price-cutting, through the giving of premiums or similar unfair trade practices.

"In the Philadelphia area we rarely hear the subject of utility merchandising discussed. The merchandising committee of this Pennsylvania Electric Association deserves high praise for the splendid work it did in establishing the proper understanding on this subject throughout the retail trade in Pennsylvania a few years ago.

"An interesting commentary on the Philadelphia situation is found in the fact that when, a few years ago, an anti-utility merchandising bill was introduced in the Pennsylvania State Legislature, forty Philadelphia retailers of electrical appliances took time off to go to Harrisburg in a body and vigorously oppose it.

DEALERS' PROBLEMS

"But our electrical dealers have many serious problems today. After spending considerable time with the retailers of the Philadelphia area during a recent investigation, I can assure you that if I should find myself in the business of retailing electrical appliances, my first act would be to go out of business. Conditions in this branch of our industry are most discouraging.

"Dealers have brought much of this misery on themselves, although somewhat aided and abetted by the distributor. Too many dealers felt that in order to succeed they must increase their volume, regardless of method used.

"Consequently, they pursued a price-cutting policy which has diminished their profits to the point of invisibility. Plus this—in order to meet each other's competition, they have gone in for ridiculous trade-in allowances, no down payments and long term leases. The fallacy of these methods is being brought, all too often, to our attention by the number of business failures.

DISTRIBUTOR RESPONSIBILITY

"The distributor has been guilty, we find, and is responsible for some of the present trouble. He has been selling too many consumers at wholesale prices. He has been selling to fraternal buying organizations; has sold to the employes of any industrial and commercial account on his books all at wholesale prices. He has thus created false and unfair competition which has encouraged or driven dealers to cut prices. So here's what we're doing.

FAIR TRADE LAWS

"In the State of Pennsylvania we have a Fair Trade Practice Bill—one of the few bills, by the way, that the Pennsylvania Legislature has passed in recent years which is written in English. It is called—'An act to protect trade mark owners, distributors and the public against injuries and uneconomic practices in the distribution of articles of standard quality under a distinguished trade mark, brand or name.'

"In effect it provides that sales contracts may contain clauses which definitely specify the price at which an article **must be sold**—and that any deviation in advertising or otherwise offering for sale, or selling such an article at lower than specified price is unfair competition and is actionable at the suit of any person damaged thereby. It is interesting to note that the new Federal Fair Trade Law known as the Miller-Tydings Act makes legal this price maintenance between states having a Fair Trade Practice law. All states except Alabama, Delaware, Mississippi, Missouri, Texas, Vermont and the District of Columbia have such laws.

"With our state law as authority, our association engaged the services of William Schnader, former Attorney General of the State of Pennsylvania, and began in earnest to do something toward the rectifying of the evils within the industry as far as the dealer was concerned.

"Without going into further detail, I will say that within 30 days 90% of all the radio sets and a large percentage of all electric refrigerators in metropolitan Philadelphia will be sold under a fair trade practice agreement which not only establishes price maintenance, but provides for cash penalties and the collection of liquidating damages for any violation thereof.

ELEMENTS IN ASSOCIATION

"Four elements then,—the manufacturer, the distributor, the dealer, the contractor—the great allies of the utility—combine to make up the Electrical Association of Philadelphia, whose primary object is to harmonize the industry within itself and with the public it serves. They comprise its membership with a few members-at-large consisting of representatives of electrical educational institutions, city inspection department, maintenance engineers and the press.

"So you see, we are dedicated to coordinate the entire electrical industry in our area in order to present a united front to the public. It is in pursuit of this purpose that I have discovered that **nobody sells the kilowatt hour.** It is not something one can or wants to buy, have wrapped up and carry out. Of itself, it has no value. It must be applied to be useful.

"The inventor must visualize and design an appliance; the manufacturer must produce, the distributor must lay in a stock, the dealer must display the commodity as an idea of usefulness and convenience. Finally the consumer, desiring the advantages and benefits of the appliance, buys it, and in order to realize its benefits, he must also buy a kilowatt hour. Nobody sells it—it is bought—not sold.

VALUE OF ASSOCIATION

"Great days are ahead for all of us in the electrical industry if we never forget that an undivided front makes the strongest attack. Associations are an important factor in bringing to public consciousness the values and advantages of electricity and its applications. There are many times when an association can say and do things that would come with bad taste from any branch of the industry.

"In conclusion, may I enlist the support of utilities for **local** electrical organization. They represent the force that will further tie together the industry and create a mutual understanding of the importance of each factor in it and develop a spirit of unity that will carry it forward as never before in its history.

"With increasing taxation, regulation and operating costs, the only salvation of the electrical utilities, as I see it, lies in the increasing of their output by having the public purchase more power.

"If this is true, how can this load increase be attained more quickly and economically than by stimulating and encouraging those four branches of the industry whose life blood depends on making, selling and installing those commodities which will bring about the desired result."

The Role of the Electrical Association

The importance of the local electrical association in appliance merchandising was pointed out to a group of Pennsylvania utility executives, together with a plea for utility cooperation in building a strong electrical industry through such local groups, in a recent speech by George R. Conover, managing director of the Electrical Association of Philadelphia. Mr. Conover's speech is reported on this page.

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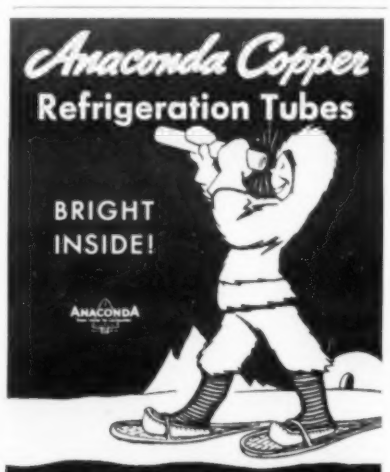

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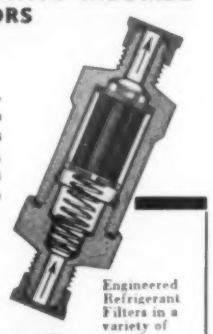

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Send for FREE Catalog

Berube Compares Cold Air with Liquid Freezing Process in Handling Fish

(Concluded from Page 11, Column 3)

As in the case of milk preservation, the application of cold for the preservation of fish, which is highly perishable, has to be done as soon as possible after fish is caught, and the faster the process of cold penetration, the longer the period of safe preservation. As liquid solutions extract heat about five times faster than still air, melting ice is one of the best refrigerants.

FROZEN FISH

However, fresh or chilled fish has its limitations, and the demand for a high quality frozen fish has been created. The old still-air freezer is discarded (scientifically speaking), and our men of research have developed a patented process. Heat can be taken out of the fish by three methods: convection, conduction, and radiation. Radiation is no use. Air is the poorest conductor but the fastest convector of heat. A liquid solution is a good conductor and can extract heat five times as fast as still air.

However, with the increased thickness of the fish the conduction decreases and the advantages of the liquid solution as a medium for extraction of heat are somewhat minimized. So modern practice has adopted the liquid solution for packaged fish with either direct or indirect contact, and has kept circulating air or coldblast for round fishes and in particular for very large fish.

The most used liquid solution has been a combination of sodium or calcium brine with other chemicals. Even sodium chloride brine has a deteriorating effect on the appearance of fish on account of a slight salt penetration. One scientist has found a liquid solution that uses no brine at all. As soon as his new discovery is available we are going to adopt it.

On the other hand, circulating air is still slower than liquid solutions, and has a tendency to cause quite an unusual amount of dessication on the outside of fish. This has been overcome by dipping fish in water before freezing, or better by leaving a small outside layer of fish to freeze in still air before starting the circulating fans.

Both systems are far advanced and on a solid footing, but there is yet room for improvement in many details and research continues. When found, these improvements will be translated into the industry. Fish frozen as soon as caught is fresher when defrosted than ordinary fresh chilled fish as found on distant markets, and the trend of the trade is towards an extension of the freezing industry.

Constant Cold Needed to Retain Vitamin C When Packing Peas, Researchers Find

(Concluded from Page 11, Column 2)

The work reported at this time was undertaken for the purpose of determining just what operations of the procedure employed in preparing peas for freezing are responsible for the loss. The blanching, or scalding operation, was found to be responsible for approximately one-third of the total loss.

The remainder of the loss of vitamin C was found to occur during the grading and washing operations which are necessary in order to eliminate peas of inferior quality.

Any considerable delay at any point in the process of preparing peas for freezing was found to cause additional loss of the antiscorbutic vitamin.

Losses were found to be particularly notable if, at the time of the delay, the peas were held at temperatures above 70° F. On the other hand, unfrozen peas refrigerated to about 40° F. lost vitamin C exceedingly slowly. This indicates the importance of keeping peas cool throughout the process of preparation for freezing.

Quick freezing did not cause any additional loss of this vitamin. Further, no loss was noted during holding for five months at the usual commercial storage temperature of 0° F.

When, however, peas were held at the abnormally high storage temperature of 25° F., nearly all of the vitamin C was lost in seven weeks. This indicates the great value of low storage temperatures in conserving the nutritive values of frozen vegetables.

Contrary to reports of other chemists, thawing adequately blanched frozen peas was not found to cause any appreciable loss of vitamin C. This observation is of importance, because vegetables are sometimes permitted to thaw before cooking.

New Brine Method of Quick Freezing Patented By French Engineer Described at Conference

CAMBRIDGE, Mass.—Data on a new brine method of quick-freezing meats in which a process patented by Hoveman, a French engineer, is used, was given by Dr. Maurice Piettre, director of the Institut International du Froid, Paris, France, at the Food Technology Conference held here last week.

Titled "Technical Refrigeration and Tests on Quick Freezing Applied to Meat Carcasses," the paper outlined the new method as follows:

The first experiments made on the quick freezing of whole quarters of beef were started in France at Billancourt on the initiative of the Army and under the presidency of Mr. Freycinet. Our predecessor at the Institut du Froid, Chief Engineer Barrier, conducted experiments from 1890 to 1906. He has given us some of the results he obtained.

Using large moulds employed in the manufacturing of ice, cooled internally by a continuous brine circulation, Mr. Barrier was able to freeze quarters of meat in 50 hours. To pass the product from zero to 2° C. (32 to 28.4° F.) 12 hours were required.

Recently new experiments have been made by a French refrigerating engineer, Mr. Hoveman. These trials have been based on the principle of quick freezing by a brine spray kept at a temperature of —26 to —30° C. (—14.8 to —22° F.).

The product to be frozen is placed within a latex rubber bag. A vacuum pump is applied to the bag to remove the air between the bag and the meat and thus obtain perfect contact between the product to be frozen and the brine spray. Freshly killed half sections of beef coming from the slaughterhouse are transported by overhead rail to a room where the temperature is quickly lowered so that the stiffening of the superficial muscles would help the cutting up in fore and hind quarters.

Once these quarters have been wrapped in the rubber bag and the air has been removed, they are passed under a brine shower where the quick freezing action takes place. The hindquarters can be passed through the 0 to —2° C. range (32 to 28.4° F.) in about 5 hours. In order to obtain —16° C. (3.2° F.) in the center of the muscle 15 to 16 hours are needed. The cycle does not require more than 24 hours, thus the operation room can be vacated in time for the next day's lot of freshly killed meat.

This process appears to hold definite advantages, such as economy of time and saving of floor space and rooms (about 60% of the usual area used in freezing rooms is needed for the Hoveman method). During thawing the meat is replaced in the rubber bag and is thus protected against outside atmospheric condensation as well as the contamination from dust and microorganisms in the air.

The oxidation of fats which is the greatest danger in cold storage is reduced to a minimum. As a last advantage there always is the possibility of using this system for quick chilling.

THE BUYER'S GUIDE

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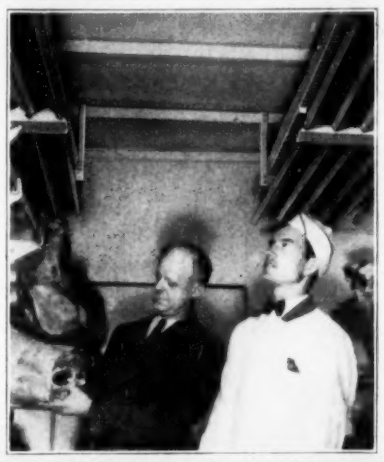
Every time we ship a Flash Cooler we know we have added another salesman to our staff. Invariably, about a week after this unit is installed, the proud owner starts singing its praises to everyone who will listen to him. And those who listen usually turn up with a Peerless Flash Cooler of their own in a very short time.

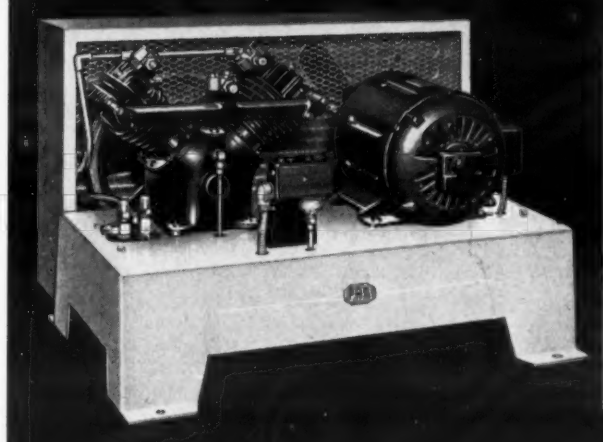
In case you're not acquainted, this Flash Cooler is the greatest "friend maker" in a commercial refrigeration line that is full of "friend makers." Pardon our enthusiasm, but if there is such a thing as a super-satisfied customer, Flash Cooler owners "fill the bill," and one of many is the gentleman from San Diego on the right of Hank Bretag (engineer for Peerless' Los Angeles factory). He has found that when it comes to keeping meats fresh and salable the Flash Cooler is a mighty handy thing to have around.



PEERLESS of AMERICA, Inc.
ESTABLISHED IN 1912 AS THE PEERLESS ICE MACHINE COMPANY
New York Factory, 43-20 34th Street, Long Island City
Main Factory—General Offices, 515 West 35th Street, Chicago
Pacific Coast Factory, 3000 S. Main Street, Los Angeles
PEERLESS JOBBERS IN ALL PRINCIPAL CITIES

BUY PEERLESS FOR PERFORMANCE

PAR AIR COOLED HIGHSIDES



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Multiple cylinders of large capacity insure very low operating speeds. Sizes ¼ to 1 horse power are wo cylinder pumps. Sizes 1½ and 2 horsepower are V type four cylinder pumps.

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All air cooled highsides are equipped with oversize condensers, extra large receivers, sight oil gauge, shut-off valve between condenser and receiver, completely wired ready for installation.

Attractively finished, red pressed steel base, motor-compressor—control, black enamel, belt and fan guard silver. Base silver striped as shown in illustration.

MODERN EQUIPMENT CORPORATION
DEFIANCE · OHIO · U·S·A

Slotwedge BRACKET
Catalog No. K-120

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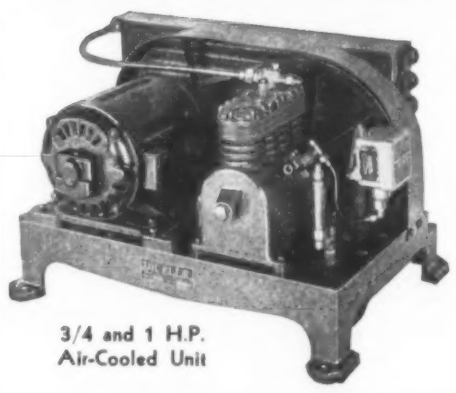
KASON HARDWARE CORPORATION
127-137 WALLABOUT STREET, BROOKLYN, N. Y.

DICELER 4 CYLINDER UNITS



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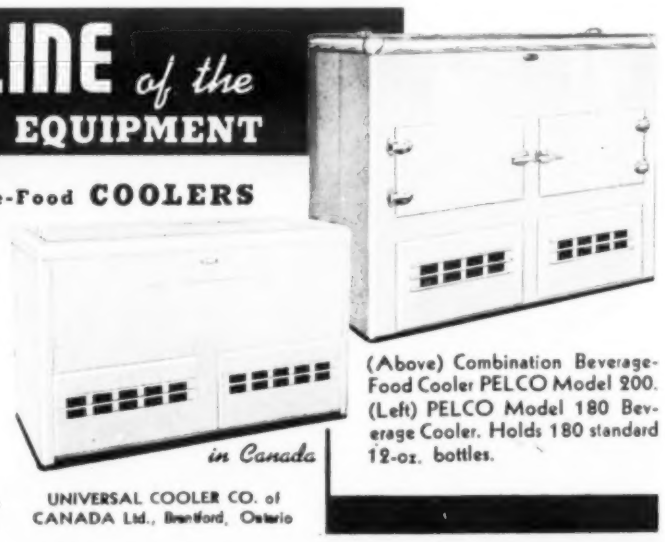


(Above) Combination Beverage-Food Cooler PELCO Model 200. (Left) PELCO Model 180 Beverage Cooler. Holds 180 standard 12-oz. bottles.

Mfg. by Refrigeration Division
PORTABLE ELEVATOR MFG. CO.
BLOOMINGTON, ILLINOIS, U. S. A.

in Canada
UNIVERSAL COOLER CO. of CANADA Ltd., Brantford, Ontario

Conover Challenges Utilities To Aid Local Associations in Building up Electrical Industry

BEDFORD SPRINGS, Pa.—Hurling a challenge at the public utilities to throw their support behind electrical associations who are trying to present a "united electrical industry front" to the public, George R. Conover, managing director of the Electrical Association of Philadelphia, warned members of the Pennsylvania Electric Association at their recent convention here that failure to help distributors and dealers meet the problems that faced them would mean ultimate disaster to the power companies.

Expressing "surprise" that the power companies had deigned to invite an association manager to address them, Mr. Conover went on to explain the purposes and functions of an electrical association, with specific reference as to how they are operating to meet such problems as price-cutting and excessive trade-ins, and ended his address with a plea for whole-hearted utility cooperation.

Mr. Conover built his talk around the question: "Who sells the kilowatt hour?"

COORDINATION DIFFICULTIES

The complex nature of the electrical industry, considered both nationally and locally, must be taken into account, said Mr. Conover. Any attempt to plan a program of coordination presents more difficulties than would be encountered in practically any other industry, yet the very fundamental reason for the existence of an association is to develop just such a program of constant effort to promote constructive activities.

Only in this way, said Mr. Conover, can an association capture, deserve and hold the support of its membership. This is particularly true of a local association, whose duty it is to both represent and interpret the views of the entire industry; manufacturers, distributors and dealers, as well as contractors and utilities.

Because of their direct or ultimate impact upon the public, the majority of an association's promotional efforts are with the manufacturers, distributors and dealers, the speaker explained.

"Of course, the power company deals directly with the consumer as well, but its functions and operations are so constantly presented to you that I shall ignore them somewhat in order to give the proper amount of importance to the others in the kilowatt hour picture—namely, manufacturer, distributor, contractor, and dealer," said Mr. Conover.

ROLE OF MANUFACTURER

"Let us consider the **Electrical Manufacturer.** It is my honest opinion that not one of us gives a just amount of credit and gratitude to the manufacturer for the gigantic part he has played in the advancement of the electrical industry.

"It is the manufacturer who has developed and perfected all the electrical equipment and appliances in use today, and who continues untiringly to develop new current consuming products. He brought the electric refrigerator through its troublesome and profitless years to the high state of perfection in which we know it today.

"His research laboratories through years of expensive experimentation have given us our present degree of perfection in the electric range, water heater and the numerous other appliances that contribute millions of dollars in sales annually to the industry, together with continued increase in load. He did this as pioneers usually do, largely with his own capital, knowing that somewhere ahead there were profits for all.

"To be sure, all along the line he was aided and encouraged by the farsighted utilities—and much of the latter work was done directly by them; but the perfecting of the product was distinctly a contribution of the manufacturer."

SERVICE OF DISTRIBUTOR

In our complex system of merchandising, caused chiefly by the geographical immensity of our markets, the electrical distributor or wholesaler is as necessary as light and power, Mr. Conover told the utility listeners.

"He serves the manufacturer by spreading the cost of distribution over many lines of merchandise," said the speaker. "He substantially reduces the producer's operating, warehousing and selling costs, **thus making lower appliance prices possible to the consumer.**

"His well-trained sales organization provides an intensive and economic sales coverage and service contacts; simplifies the handling of orders and saves accounting and collection costs. His showrooms provide proper displays of commodities, economical distribution of literature; reduce packing and shipping costs; and through anticipation orders, the distributor levels the dangerous peaks and valleys in the manufacturer's production charts.

"But, greatest of all, **he is a load-builder.** Every working day over 10,000 electrical distributor salesmen in the United States sell great quantities of current consuming electrical appliances and equipment.

UTILITY RETAILING

"Before proceeding with the dealer's part in the kilowatt hour picture, may I be permitted to lay the axe of fact at the root of the old fallacy that the dealer is disturbed by the active selling of merchandise by the utility.

"It is my considered belief that the average dealer has no particular interest in whether or not the utility sells merchandise, so long as a definite policy is maintained which does not aim or tend to destroy his market through price-cutting, through the giving of premiums or similar unfair trade practices.

"In the Philadelphia area we rarely hear the subject of utility merchandising discussed. The merchandising committee of this Pennsylvania Electric Association deserves high praise for the splendid work it did in establishing the proper understanding on this subject throughout the retail trade in Pennsylvania a few years ago.

"An interesting commentary on the Philadelphia situation is found in the fact that when, a few years ago, an anti-utility merchandising bill was introduced in the Pennsylvania State Legislature, forty Philadelphia retailers of electrical appliances took time off to go to Harrisburg in a body and vigorously oppose it.

DEALERS' PROBLEMS

"But our electrical dealers have many serious problems today. After spending considerable time with the retailers of the Philadelphia area during a recent investigation, I can assure you that if I should find myself in the business of retailing electrical appliances, my first act would be to go out of business. Conditions in this branch of our industry are most discouraging.

"Dealers have brought much of this misery on themselves, although somewhat aided and abetted by the distributor. Too many dealers felt that in order to succeed they must increase their volume, regardless of method used.

"Consequently, they pursued a price-cutting policy which has diminished their profits to the point of invisibility. Plus this—in order to meet each other's competition, they have gone in for ridiculous trade-in allowances, no down payments and long term leases. The fallacy of these methods is being brought, all too often, to our attention by the number of business failures.

DISTRIBUTOR RESPONSIBILITY

"The distributor has been guilty, we find, and is responsible for some of the present trouble. He has been selling too many consumers at wholesale prices. He has been selling to fraternal buying organizations; has sold to the employes of any industrial and commercial account on his books all at wholesale prices. He has thus created false and unfair competition which has encouraged or driven dealers to cut prices. So here's what we're doing.

FAIR TRADE LAWS

"In the State of Pennsylvania we have a Fair Trade Practice Bill—one of the few bills, by the way, that the Pennsylvania Legislature has passed in recent years which is written in English. It is called—'An act to protect trade mark owners, distributors and the public against injuries and uneconomic practices in the distribution of articles of standard quality under a distinguished trade mark, brand or name.'

"In effect it provides that sales contracts may contain clauses which definitely specify the price at which an article must be sold—and that any deviation in advertising or otherwise offering for sale, or selling such an article at lower than specified price is unfair competition and is actionable at the suit of any person damaged thereby. It is interesting to note that the new Federal Fair Trade Law known as the Miller-Tydings Act makes legal this price maintenance between states having a Fair Trade Practice law. All states except Alabama, Delaware, Mississippi, Missouri, Texas, Vermont and the District of Columbia have such laws.

"With our state law as authority, our association engaged the services of William Schnader, former Attorney General of the State of Pennsylvania, and began in earnest to do something toward the rectifying of the evils within the industry as far as the dealer was concerned.

"Without going into further detail, I will say that within 30 days 90% of all the radio sets and a large percentage of all electric refrigerators in metropolitan Philadelphia will be sold under a fair trade practice agreement which not only establishes price maintenance, but provides for cash penalties and the collection of liquidating damages for any violation thereof.

ELEMENTS IN ASSOCIATION

"Four elements then,—the manufacturer, the distributor, the dealer, the contractor—the great allies of the utility—combine to make up the Electrical Association of Philadelphia, whose primary object is to harmonize the industry within itself and with the public it serves. They comprise its membership with a few members-at-large consisting of representatives of electrical educational institutions, city inspection department, maintenance engineers and the press.

"So you see, we are dedicated to coordinate the entire electrical industry in our area in order to present a united front to the public. It is in pursuit of this purpose that I have discovered that **nobody sells the kilowatt hour.** It is not something one can or wants to buy, have wrapped up and carry out. Of itself, it has no value. It must be applied to be useful.

"The inventor must visualize and design an appliance; the manufacturer must produce, the distributor must lay in a stock, the dealer must display the commodity as an idea of usefulness and convenience. Finally the consumer, desiring the advantages and benefits of the appliance, buys it, and in order to realize its benefits, he must also buy a kilowatt hour. Nobody sells it—it is bought—not sold.

VALUE OF ASSOCIATION

"Great days are ahead for all of us in the electrical industry if we never forget that an undivided front makes the strongest attack. Associations are an important factor in bringing to public consciousness the values and advantages of electricity and its applications. There are many times when an association can say and do things that would come with bad taste from any branch of the industry.

"In conclusion, may I enlist the support of utilities for local electrical organization. They represent the force that will further tie together the industry and create a mutual understanding of the importance of each factor in it and develop a spirit of unity that will carry it forward as never before in its history.

"With increasing taxation, regulation and operating costs, the only salvation of the electrical utilities, as I see it, lies in the increasing of their output by having the public purchase more power.

"If this is true, how can this load increase be attained more quickly and economically than by stimulating and encouraging those four branches of the industry whose life blood depends on making, selling and installing those commodities which will bring about the desired result."

The Role of the Electrical Association

The importance of the local electrical association in appliance merchandising was pointed out to a group of Pennsylvania utility executives, together with a plea for utility cooperation in building a strong electrical industry through such local groups, in a recent speech by George R. Conover, managing director of the Electrical Association of Philadelphia. Mr. Conover's speech is reported on this page.

GO TO Gilmer FOR YOUR V-BELTS

Why?...Here's why!

GILMER BELTS ARE NEVER SKIMPED
Full size. Full width. Full thickness. Don't turn over in the grooves.

GILMER BELTS STAND SERVICE
Brute-strong. Full-bodied. Tough. Minimum stretch. Run quietly, *permanently*, under pulsating compressor loads.

GILMER BELTS FIT
Made by belt engineers on the world's largest assortment of V-moulds. Easy to get the belt that fits special jobs—all jobs—exactly.

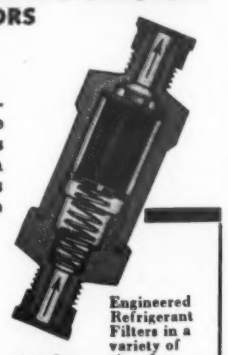
GILMER GIVES QUICK DELIVERIES
Speedy service everywhere, always. Full stocks on hand all the time. Gilmer jobbers fill your orders fast . . . no lost time, no lost customers.

GILMER DISPLAYS PAY
The Gilmer Bar (35 hooks on a 36-inch rack) and the Gilmer Hook take little space and keep belt stock in perfect order. Attractive. Easy to inventory. Your belts are out to be seen and sold. Ask about FREE offer.

GET GILMER "V's"
Only Gilmers give you those 5 Famous Features

L. H. GILMER CO.
Tacony, Philadelphia
THE OLDEST FIRM OF RUBBER FABRIC BELT SPECIALISTS
Send for FREE Catalog

USE THE ZENITH REFRIGERANT FILTER
. . . FOR SULPHUR DIOXIDE FREON OR METHYL CHLORIDE REFRIGERATORS



Because
Zenith elements provide finer spacings (.002") than any asbestos sack or wire screen filter.
Easily Installed
Easily Cleaned
Permanent Protection
No Wool or Asbestos to Rot and Wear Out
Corrosion Proof—Leak Proof
Ample Capacity
Engineered Refrigerant Filters in a variety of sizes for varying capacities.
Positive protection against dirt in Expansion Valves, Solenoid Valves, Capillary Tubes and other liquid control devices.
ZENITH CARBURETOR CO.
Subsidiary
BENDIX AVIATION CORP.
Detroit, Michigan.

JOE'S ELECTED
When Hard-Boiled Joe says "Phooey for that sulphur dioxide, I can take it," he's just easy pickin' for old SO_2. But there's another angle. You appreciate Joe—good man—don't want to see him handicapped—even a little; then provide him with lung protection and if necessary put the "heat on" to make him wear it.

CESCO HEALTHGUARD FUME KIT
is one hundred per cent effective; but Joe won't care about that unless the thing is "easy" on the face. That's where you'll get him. For the mask goes off and on readily, does not bind, and needs only one adjustment to make it fit Joe's particular sort of beauty, perfectly.

JOE WILL 'GO'
The Cesco Healthguard Fume Kit has Joe behind the eight ball no matter what he says. It is light, easily carried—and a friend of his. He'll go along. Kit comes equipped with cartridges for Methyl Chloride, Ammonia and Sulphur Dioxide. Write us.

CHICAGO EYE SHIELD CO.
2352 Warren Blvd. CHICAGO, ILLINOIS

Anaconda Copper Refrigeration Tubes
BRIGHT INSIDE!
ANACONDA
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

ALCO Known wherever refrigerants are controlled

Berube Compares Cold Air with Liquid Freezing Process in Handling Fish

(*Concluded from Page 11, Column 3*)

As in the case of milk preservation, the application of cold for the preservation of fish, which is highly perishable, has to be done as soon as possible after fish is caught, and the faster the process of cold penetration, the longer the period of safe preservation. As liquid solutions extract heat about five times faster than still air, melting ice is one of the best refrigerants.

FROZEN FISH

However, fresh or chilled fish has its limitations, and the demand for a high quality frozen fish has been created. The old still-air freezer is discarded (scientifically speaking), and our men of research have developed a patented process. Heat can be taken out of the fish by three methods: convection, conduction, and radiation. Radiation is no use. Air is the poorest conductor but the fastest convector of heat. A liquid solution is a good conductor and can extract heat five times as fast as still air.

However, with the increased thickness of the fish the conduction decreases and the advantages of the liquid solution as a medium for extraction of heat are somewhat minimized. So modern practice has adopted the liquid solution for packaged fish with either direct or indirect contact, and has kept circulating air or coldblast for round fishes and in particular for very large fish.

The most used liquid solution has been a combination of sodium or calcium brine with other chemicals. Even sodium chloride brine has a deteriorating effect on the appearance of fish on account of a slight salt penetration. One scientist has found a liquid solution that uses no brine at all. As soon as his new discovery is available we are going to adopt it.

On the other hand, circulating air is still slower than liquid solutions, and has a tendency to cause quite an unusual amount of dessication on the outside of fish. This has been overcome by dipping fish in water before freezing, or better by leaving a small outside layer of fish to freeze in still air before starting the circulating fans.

Both systems are far advanced and on a solid footing, but there is yet room for improvement in many details and research continues. When found, these improvements will be translated into the industry. Fish frozen as soon as caught is fresher when defrosted than ordinary fresh chilled fish as found on distant markets, and the trend of the trade is towards an extension of the freezing industry.

Constant Cold Needed to Retain Vitamin C When Packing Peas, Researchers Find

(*Concluded from Page 11, Column 2*)

The work reported at this time was undertaken for the purpose of determining just what operations of the procedure employed in preparing peas for freezing are responsible for the loss. The blanching, or scalding operation, was found to be responsible for approximately one-third of the total loss.

The remainder of the loss of vitamin C was found to occur during the grading and washing operations which are necessary in order to eliminate peas of inferior quality.

Any considerable delay at any point in the process of preparing peas for freezing was found to cause additional loss of the antiscorbutic vitamin.

Losses were found to be particularly notable if, at the time of the delay, the peas were held at temperatures above 70° F. On the other hand, unfrozen peas refrigerated to about 40° F. lost vitamin C exceedingly slowly. This indicates the importance of keeping peas cool throughout the process of preparation for freezing.

Quick freezing did not cause any additional loss of this vitamin. Further, no loss was noted during holding for five months at the usual commercial storage temperature of 0° F.

When, however, peas were held at the abnormally high storage temperature of 25° F., nearly all of the vitamin C was lost in seven weeks. This indicates the great value of low storage temperatures in conserving the nutritive values of frozen vegetables.

Contrary to reports of other chemists, thawing adequately blanched frozen peas was not found to cause any appreciable loss of vitamin C. This observation is of importance, because vegetables are sometimes permitted to thaw before cooking.

New Brine Method of Quick Freezing Patented By French Engineer Described at Conference

CAMBRIDGE, Mass.—Data on a new brine method of quick-freezing meats in which a process patented by Hoveman, a French engineer, is used, was given by Dr. Maurice Piettre, director of the Institut International du Froid, Paris, France, at the Food Technology Conference held here last week.

Titled "Technical Refrigeration and Tests on Quick Freezing Applied to Meat Carcasses," the paper outlined the new method as follows:

The first experiments made on the quick freezing of whole quarters of beef were started in France at Billancourt on the initiative of the Army and under the presidency of Mr. Freycinet. Our predecessor at the Institut du Froid, Chief Engineer Barrier, conducted experiments from 1890 to 1906. He has given us some of the results he obtained.

Using large moulds employed in the manufacturing of ice, cooled externally by a continuous brine circulation, Mr. Barrier was able to freeze quarters of meat in 50 hours. To pass the product from zero to —2° C. (32 to 28.4° F.) 12 hours were required.

Recently new experiments have been made by a French refrigerating engineer, Mr. Hoveman. These trials have been based on the principle of quick freezing by a brine spray kept at a temperature of —26 to —30° C. (—14.8 to —22° F.).

The product to be frozen is placed within a latex rubber bag. A vacuum pump is applied to the bag to remove the air between the bag and the meat and thus obtain perfect contact between the product to be frozen and the brine spray. Freshly killed half sections of beef coming from the slaughterhouse are transported by overhead rail to a room where the temperature is quickly lowered so that the stiffening of the superficial muscles would help the cutting up in fore and hind quarters.

Once these quarters have been wrapped in the rubber bag and the air has been removed, they are passed under a brine shower where the quick freezing action takes place. The hindquarters can be passed through the 0 to —2° C. range (32 to 28.4° F.) in about 5 hours. In order to obtain —16° C. (3.2° F.) in the center of the muscle 15 to 16 hours are needed. The cycle does not require more than 24 hours, thus the operation room can be vacated in time for the next day's lot of freshly killed meat.

This process appears to hold definite advantages, such as economy of time and saving of floor space and rooms (about 60% of the usual area used in freezing rooms is needed for the Hoveman method). During thawing the meat is replaced in the rubber bag and is thus protected against outside atmospheric condensation as well as the contamination from dust and microorganisms in the air.

The oxidation of fats which is the greatest danger in cold storage is reduced to a minimum. As a last advantage there always is the possibility of using this system for quick chilling.

THE BUYER'S GUIDE

We Have Hundreds of Salesmen—
who are not on the Peerless payroll

Every time we ship a Flash Cooler we know we have added another salesman to our staff. Invariably, about a week after this unit is installed, the proud owner starts singing its praises to everyone who will listen to him. And those who listen usually turn up with a Peerless Flash Cooler of their own in a very short time.

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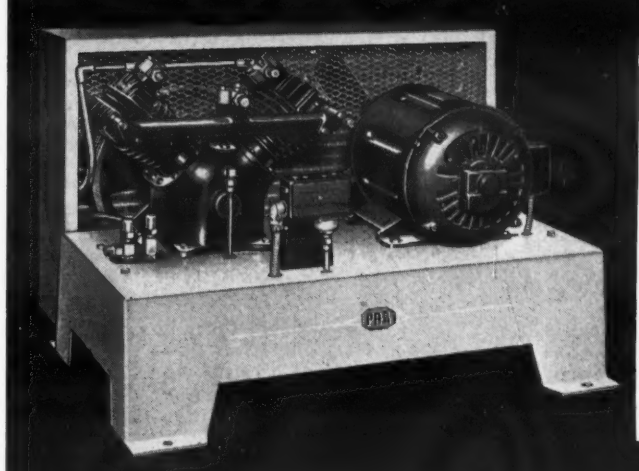
PAR AIR COOLED HIGHSIDES



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DEFIANCE - OHIO - U-S-A

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Catalog No. K-120

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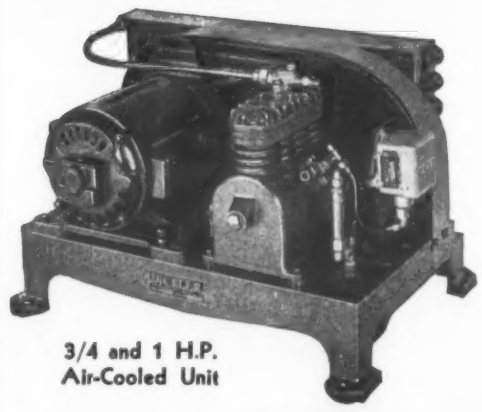
127-137 WALLABOUT STREET, BROOKLYN, N. Y.

DICELER 4 CYLINDER UNITS



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Mfg. by Refrigeration Division
PORTABLE ELEVATOR MFG. CO.
BLOOMINGTON, ILLINOIS, U.S.A.

in Canada
UNIVERSAL COOLER CO. of CANADA Ltd., Brantford, Ontario

Air Conditioning Surveys

On this and the two pages following, the NEWS presents detailed surveys from several important market areas showing where air conditioning has been installed in those areas during the first six months of 1937.

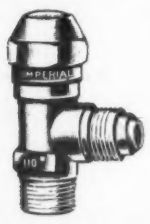
Next week the NEWS will publish summaries of air-conditioning installations, classified by type of building served, from most of the large cities of the United States. These summaries will show number of installations in each classification, horsepower ratings, and when the installations were made.

Northern Indiana Area

(Data compiled by Northern Indiana Public Service Co.)

Name	Make	Hp.
Offices		
Dr. Raushenbach, Hammond	Westinghouse	3½
Residences		
G. B. Lanham, Hammond	General Electric	3⅜
Restaurants		
Brahos Cafe, Hammond	General Electric	8½
Broadway Grill, Hammond	Curtis	5½
Theaters		
Hohman Theater, Hammond	Chrysler-Airtemp	35
Stores		
Jack Fox & Sons, Hammond	General Electric	8
Nagdeman's Clothing, East Chicago	Carrier	6
F. W. Woolworth Co., Hammond	York	97

THE BUYER'S GUIDE



MORE AND MORE JOBS
will call for this new Relief Valve

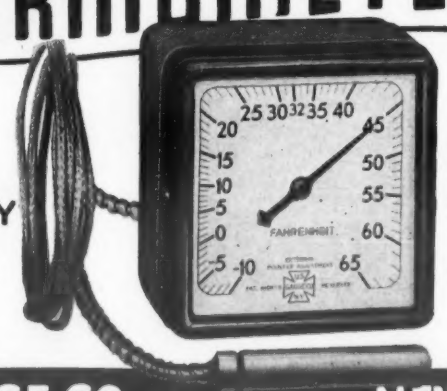
A GOOD many cities are working up ordinances requiring pressure relief valves on all installations and you can't go wrong if you install the new No. 280C Imperial relief valve. The valve is installed in the high side and will open at its set relief pressure. The outlet is connected by copper tubing to the atmosphere or to the low side. The body of the valve is a brass forging with a special composition seat and all other parts are brass or bronze. The seat will withstand all commercial refrigerants. Furnished for relief pressures of 90, 110, 135, 150, 180, 195 and 210 lbs. in a variety of sizes. Try one of these No. 280C valves on your next job. Be sure and specify size and relief pressure.

IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago, Ill.

IMPERIAL Valves — ORDER FROM YOUR JOBBER

FITTINGS • TOOLS • CHARGING LINES • FLOATS • DEHYDRATORS • STRAINERS

U. S. REFRIGERATION THERMOMETERS



U.S. GAUGE CO. N.Y.

PERMANENTLY ACCURATE

U.S. BUILDS BETTER THERMOMETERS

U.S. GAUGE CO. 44 BEAVER ST., NEW YORK

Dayton V-Belts are the logical choice for all types of appliances, because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating. A nearby distributor carries a complete stock.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO
WORLD'S LARGEST MANUFACTURER OF V-BELTS

Dayton V-BELTS

Objections Raised To Proposed Fees In Chicago Code

(Concluded from Page 1, Column 1)

Manufacturers Association said that the proposed code was satisfactory to Nema members in several respects, but that some changes would be recommended at a later hearing.

Walter R. Gregory of the State Street Council suggested that the ordinance be turned over to two sub-committees, one to consider fees and the other operating requirements, but this was passed in favor of the single sub-committee.

Objection of some business groups to the proposed code is thought to be based on the permit and annual inspection fees which it establishes, more than on the installation and operating requirements which it sets up.

Fees established by the ordinance are of two classifications, the first collectable when the permit for installation of a refrigeration system is granted, and the second for the annual inspections thereafter.

Permit fees, which include the first inspection, are as follows for household multiple and remote installations:

Class B and C (systems containing more than 20 and less than 1,000 lbs. of refrigerant)—$10 for each compressor unit or generator, and 25 cents for each evaporator.

Class D (systems containing more than 6 but not more than 20 lbs. of refrigerant)—$6 for each compressor unit or generator, and 25 cents for each evaporator.

For commercial and industrial systems, permit fees are:

Class A (1,000 lbs. or more of refrigerant)—$20 for each compressor unit or generator.

Class B (100 to 1,000 lbs. of refrigerant)—$17 for each compressor unit or generator.

Class C (20 to 100 lbs of refrigerant)—$10 for each compressor unit or generator.

Class D—$6 for each compressor unit or generator.

Permit for a single system is $1, and the permit fee for a remote system serving not more than one evaporator, containing less than 6 lbs. of refrigerant, with power supplied by a motor of not over ⅓ hp. is $3.

Annual inspection fees for household multiple and remote systems are:

Class B—$10 for each compressor unit or generator; Class C—$5; and Class D—$3.

For commercial and industrial systems, the annual inspection fees are:

For each compressor or generator of 5 tons or less capacity—$3; for each compressor or generator over 5 tons but not over 35 tons—$5; for each compressor or generator over 35 tons but not over 100 tons—$10; and $12 for each compressor or generator over 100 tons capacity.

Compressor capacity is based on 5° evaporator temperature and 86° condenser temperature, and compressor displacement is to conform to the following table:

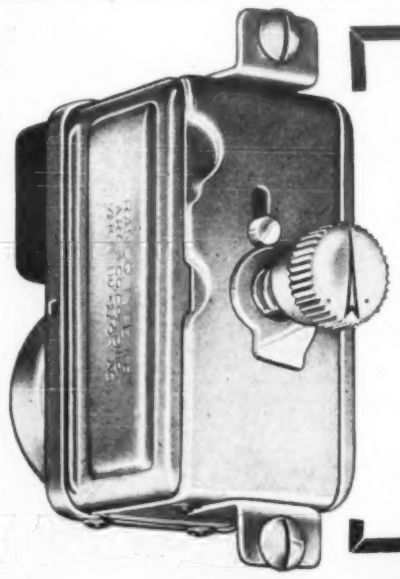
	C.i.m. Per Ton
Carbon Dioxide (CO_2)	1,625
Ammonia (NH_3)	6,912
Freon-12 (CCl_2F_2)	12,528
Methyl Chloride (CH_3Cl)	13,824
Sulphur Dioxide (SO_2)	20,736

All fees collected under the ordinance are payable to the City Collector.

Houston, Tex. (Compiled by Houston Power & Lighting Co.)

Name	Equipment	Installed By	Tons	Hp.
Offices				
Navarro Oil Co.	General Electric	Air Condi. Co.	30.0	38.0
Sartartia Dairy	General Electric	Air Condi. Co.	2.0	2.75
Tex-O-Can Flour Mills	General Electric	Air Condi. Co.	2.0	2.0
Houston Natural Gas Co.	General Electric	Air Condi. Co.	1.0	1.0
Dr. F. F. Meine	General Electric	Air Condi. Co.	1.0	1.0
Air Conditioning Co.	General Electric	Air Condi. Co.	5.0	6.0
McDermot & Co.	Kelvinator	Straus-Bodenh'r	2.0	2.0
B. V. Christie & Co.	Kelvinator	Straus-Bodenh'r	3.0	3.2
Dixie Heating & Vent. Co.	Frick	Dixie H. & V. Co.	4.5	5.0
Houston Bldg. & Loan	Frigidaire	Robisc'g-Kiesling	18.0	22.0
Dr. Allan Bloxom	Frigidaire	Robisc'g-Kiesling	2.0	2.5
Capitol Optical Co.	Frigidaire	Robisc'g-Kiesling	2.0	1.73
Houston Milling Co.	Frigidaire	Robisc'g-Kiesling	15.0	18.0
Dr. J. G. Eganhouse	Frigidaire	Robisc'g-Kiesling	.75	.75
Dr. Robert C. Botts	Frigidaire	Robisc'g-Kiesling	.5	.5
Maritime Oil Co.	Frigidaire	Robisc'g-Kiesling	5.0	5.7
George S. Cohen	Frigidaire	Robisc'g-Kiesling	3.0	3.5
7-Up Bottling Co.	Westinghouse	Cochran Air Condi.	3.0	4.5
F. H. Malone & Co.	Westinghouse	Cochran Air Condi.	1.5	2.0
Maxwell House Coffee	Westinghouse	Cochran Air Condi.	5.0	7.0
Second Nat'l Bank Bldg.	Frick	Dixie H. & V. Co.	400.0	515.0
Brown & Root, Inc.	Carrier	Straus-Frank	8.0	12.0
J.M.A.C.	Carrier	Straus-Frank	12.5	15.0
Chamberlin's	Carrier	Straus-Frank	3.5	8.5
Frick-Reid Supply Co.	Carrier	Straus-Frank	7.5	8.5
Hugh Potter	Carrier	Straus-Frank	2.0	2.0
American Can Co.	Carrier	Straus-Frank	2.5	3.0
Houston Milling Co.	Carrier	Straus-Frank	.7	.75
Norge Houston Co.	Carrier	Straus-Frank	.7	.75
Milton R. Underwood & Co.	Chrysler	Way Engi. Co.	6.0	6.66
West Production Co.	Chrysler	Way Engi. Co.	3.0	3.0
Dr. Henry Maresh	Chrysler	Way Engi. Co.	10.0	10.5
Cameron Iron Works	Chrysler	Way Engi. Co.	3.0	3.0
San Jacinto Finance Co.	Chrysler	Way Engi. Co.	6.0	6.75
Black Bros. Furn. Co.	Chrysler	Way Engi. Co.	6.0	6.66
Vogue Slipper Shop	Chrysler	Way Engi. Co.	.9	1.50
Humble Oil & Ref. Co.	York	York Ice Ma. Co.	20.0	33.3
Texas Ice & Fuel Co.	York	York Ice Ma. Co.	Ice	2.0
South Texas Cotton Oil	York	York Ice Ma. Co.	6.0	1.50
Erwin Bag Co.	York	York Ice Ma. Co.	3.0	3.33
Standard Oil Field Sup.	York	York Ice Ma. Co.	6.0	9.25
Parkersburg Rig & Reel Co.	York	York Ice Ma. Co.	2.5	3.33
Standard Oil & Field Co.	York	York Ice Ma. Co.	6.5	9.25
Houston Wholesale Appl.	York	Star El. & Eng. Co.	.75	.75
Star Elec. & Eng. Co.	York	Star El. & Eng. Co.	.75	.75
Houston Poster Advertising	York	Star El. & Eng. Co.	1.0	1.0
Elkins, Sweaton &	York	Star El. & Eng. Co.	1 & .75	1 & .75
Perfectionaire Cond. Co.	Cool-Aire	Perfection Aire Co.	3 & 5	5.0
Dr. Dan Scott	Cool-Aire	Perfection Aire Co.	0.6	.50
Dr. Homer E. Prince	Cool-Aire	Perfection Aire Co.	0.6	.50
Dr. Harris	Cool-Aire	Perfection Aire Co.	0.6	.50
Doctor's Clearing House	Cool-Aire	Perfection Aire Co.	0.6	.50
Alan Robinson	Cool-Aire	Perfection Aire Co.	0.6	.50
J. S. Mellenger	York	York Engi. Co.	.75	1.0
B. B. Zovoico	Carrier	Straus-Frank	.7	.75
L. J. Wheeler	Pacific	Cochran Air Condi.	.5	.5
Hollyfield Laundry	Cool-Aire	Perfection Aire Co.	1.0	1.0
Residences				
Roy Kiesling	Frigidaire	Robisc'g-Kiesling	6.0	7.5
C. C. Perry	Frigidaire	Robisc'g-Kiesling	.75	.75
A. A. Bath	Kelvinator	Straus-Bodenh'r	1.0	1.0
J. O. Mack	Kelvinator	Straus-Bodenh'r	1.0	1.0
W. M. Rice	General Electric	Air Condi. Co.	12.5	16.0
George R. Brown	Carrier	Straus-Frank	7.5	8.50
John Hamman, Jr.	Carrier	Straus-Frank		2.50
Ernest Langston	Carrier	Straus-Frank	5.0	6.0
S. P. Farish	Carrier	Straus-Frank	2.0	24.0
Harry Suman	Carrier	Straus-Frank	4.0	4.5
Maurice Hirsch	Carrier	Straus-Frank	4.0	4.5
H. J. Brenner	Carrier	Straus-Frank	0.7	.75
Dave Ritchie	Carrier	Straus-Frank	0.7	.75
Ben Wolfman	Carrier	Straus-Frank	0.7	.75
Mrs. Underwood Nazro	Carrier	Straus-Frank	1.4	1.5
R. D. Straus	Carrier	Straus-Frank		10.0
E. A. Showers	Carrier	Straus-Frank	6.0	8.50
Joseph A. Burt		Adels Equip. Co.	⅞	1.0
George Ratcliffe	Carrier	Straus-Frank	.7	.75
E. M. Smith	Carrier	Straus-Frank	.7	.75
Harry L. Edwards	Carrier	Straus-Frank	.7	.75
A. H. Black	Chrysler	Way Engi. Co.	3.0	3.33
Carl Myer	Cool-Aire	Perfection Aire Co.	.75	.75
Fred J. Sandboel	Cool-Aire	Perfection Aire Co.	.50	.50
Department Stores				
Foley Bros.	Frigidaire	Robisc'g-Kiesling	26.0	31.0
Foley Bros. (5th Floor)	Frigidaire	Robisc'g-Kiesling	22.0	24.0
Foley Bros. (6th Floor)	Frigidaire	Robisc'g-Kiesling	16.0	18.0
Foley Bros. (7th Floor)	Frigidaire	Robisc'g-Kiesling	16.0	18.0
Levy Bros.	Carrier	Straus-Frank	180.0	250.0
Industrial				
Continental Can Co.	General Electric	Air Condi. Co.	50.0	55.0
Lone Star Cement Co.	General Electric	Air Condi. Co.	4.5	5.3
Texas Star Flour Mills	York	York Ice Ma. Co.	10.0	12.50
C. C. Rouse Exploration & Drilling Co.	York	Star El. & Eng. Co.	1.0	1.0
Drugs				
Mading's	York	York Ice Ma. Co.	12.0	18.50
Liggetts	York	York Ice Ma. Co.	13.5	19.0
Barber Shops				
Englebert & Dorsey	General Electric	Air Condi. Co.	3.0	3.75
Hill Barber Shop	Chrysler	Way Engi. Co.	3.0	3.50
Chestnut Barber Shop	Carrier	Straus-Frank	6.0	8.50
Clubs				
River Oaks Country Club	Carrier	Straus-Frank	50.0	60.0
Studios				
Gitting's	Carrier	Straus-Frank	5.0	7.0
Auditorium				
Jesse Jones Hall	York	York Ice Ma. Co.	220.0	225.0

(Concluded on Page 15, Column 1)



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INSIST on genuine Ranco Replacements—built to save the time of service men. Quick work—sure profits! No complaints from your customers. No costly reservicing.

Write for Bulletin showing complete line.

RANCO, Inc., Columbus, Ohio.

Houston, Tex. (Cont.)

(Concluded from Page 14, Column 5)

Cafes

Kelly's (S. Main)	Westinghouse	Cochran Air Condi.	15.0	18.0
Port Houston Cafe	Westinghouse	Cochran Air Condi.	4.5	6.0
Thornhill Cafe	Carraway-Byrd	Perfection Aire Co.	7.5	7.5
Brooks System	Chrysler	Way Engi. Co.	6.0	6.66
Brooks System	York	York Ice Ma. Co.	8.5	12.25
Brooks System	Carrier	Straus-Frank	7.0	8.50
The Chef	Carrier	Straus-Frank	4.5	5.50
Majestic Grill	Carrier	Straus-Frank	12.0	17.0

Churches

Annunciation Church	Frigidaire	Robisc'g-Kiesling	40.0	47.0

Fur Vaults

Foley Bros.	Frigidaire	Robisc'g-Kiesling	8.0	11.5

Liquor Stores

Sterling D. Anderson	Frigidaire	Robisc'g-Kiesling	.75	.75

Beauty Shops

May's Beauty Salon	Chrysler	Way Engi. Co.	3.0	3.33
Mrs. Hardy's Beauty Shop	Cool-Aire	Perfection Aire Co.	1.0	1.0
Charles & Joseph	Carrier	Straus-Frank	7.5	8.5

Jewelry Stores

Leon Gordon's	Westinghouse	Air Condi. Co.	8.5	12.0
Lechenger	Pacific		5.0	7.5

Men's Ready-To-Wear

Nathans, Inc.	Westinghouse	Cochran Air Condi.	13.0	17.0
Battlestein's, Inc.	Carrier	Straus-Frank	48.0	55.0

Shoe Stores

Florsheim	Carrier	Straus-Frank	3.0	3.75
Tom McAn	York	York Ice Ma. Co.	5.0	6.50

Ladies' Ready-To-Wear

Lerner's, Inc.	Westinghouse	Air Condi. Co.	45.0	60.0
Smart Shop	Westinghouse	Air Condi. Co.	18.0	25.0
Everett Buelow	Frick	Dixie H. & V. Co.	37.0	50.0
D. F. Peyton Co.	York	York Ice Ma. Co.	20.0	31.0
The Fashion	Carrier	Straus-Frank		

Groceries

Minimax Grocery	Frigidaire	Robisc'g-Kiesling	40.0	43.0
Nowell Grocery	Westinghouse	Cochran Air Condi.	9.5	12.0
Weingarten's, Inc., No. 5	Carrier	Straus-Frank	50.0	63.0
Bucsanyi Grocery	York	York Ice Ma. Co.	9.0	10.0
Weingarten's, Inc.	York	York Ice Ma. Co.	30.0	40.0

Theaters

St. Elmo Theater	Chrysler	Way Engi. Co.	50.0	60.0
Blue Bonnet Theater	Chrysler	Way Engi. Co.	60.0	77.5

Akron, Ohio (Data compiled by Ohio Edison Co.)

Name	Make	Hp.
Stores		
Fladen's (Optical), 197 S. Main St.	Carrier	2.0
Rudick's Jewelry, 16 S. Main St.	Frigidaire	26.0
Miriam Beauty Shop, Metropolitan Bldg.	Carrier	7.5
Offices		
Dime Bank, S. Main St.	Westinghouse	1.25
Residences		
Wm. Pfeiffer, N. Portage Path	Carrier	3.0
Restaurants		
Kasse's, E. Mill St.		8.25
Sonny Kline's, Front St. Cuy. Falls	Carrier	11.5
Karper's Restaurant, Kent	Carrier	11.5
The Village, W. Market St.	Frigidaire	7.0
Y. M. C. A. Cafeteria		11.0
Theaters		
Strand Theater, S. Main St.		107.0
Colonial Theater, E. Mill St.		102.0
Clubs		
City Club (Bar)	Frigidaire	3.0
Portage Country Club (Bar & Guest Rm.)	Westinghouse	11.63
Moose Club, 36 S. Howard St.		36.66
Funeral Parlors		
Billows Funeral Home, 118 Ash St.		16.5

Tacoma Home Conditioned by Western Furnaces, Inc.

TACOMA, Wash. — Western Furnaces, Inc. installed air-conditioning equipment in the model home recently completed here by the John Dower Lumber Co.

Amarillo Hardware Installs Cooling in KGNC Studios

AMARILLO, Tex.—Amarillo Hardware Co. supplied Kelvinator air-conditioning equipment for the new modernistic building of radio station KGNC recently opened here.

Natkin Conditioning New Tulsa Theater

TULSA, Okla.—Natkin & Co., local Westinghouse air-conditioning dealer, is air conditioning the Delman Tower Theater, now under construction at Fifteenth and Lewis Sts. here.

The theater is a deluxe residential house with a seating capacity of approximately 1,200 people. The roof is insulated with 4 inches of rock wool and the entire structure is built so as to resist as much sun load as possible in a modern building constructed for air conditioning. The architect is Scott Dunne, of Dallas, Texas.

According to Bert Natkin, local manager for Natkin & Co., there will be installed a complete all-year air-conditioning system, including steam boiler, two of the newest type Westinghouse 40-hp. sealless compressors with gas cooled motors, and one 80-ton evaporative condenser.

The entire system is to be under thermostatic control and arranged so that either half or all of the system will be in operation in accordance with the load on the house.

Air will be introduced into the theater from grilles located in offsets in the ceiling. Air will also be distributed into the lobby, men's smoking room and the ladies' powder room.

Greeley, Colo. Building Cooled by Well Water

GREELEY, Colo.—One of the largest retail air-conditioning installations in Colorado is the Carrier system recently completed at the Greeley Dry Goods Co. here. Distinctive feature of the installation supervised by Don J. McQuaid, engineer, is the use of a pump which elevates 120 g.p.m. of water from a specially driven well beneath the building.

The pump delivers water at 56° F. Passing through three banks of Aerofin coils, 200 ft. to each, the water discharges into the sewer at a temperature of approximately 60°.

The main floor of the store is 50x100 ft., with a rear balcony, 50 x 25 ft.

An increasing number of air-conditioning installations using well-and-pump systems are being made in this city, where the water level is within five to 10 feet from the surface, and the flow is apparently dependable. Other recent installations using this method include Model Flour Mills, Farr Produce Co., and Greeley Gas & Fuel Co.

York Gets $250,000 Hotel Air Conditioning Contract

JACKSON, Miss.—York Ice Machinery Corp. has been awarded the contract for air-conditioning the lobby and eight floors of the Heidelberg hotel here. The hotel is spending $250,000 on air conditioning and other improvements.

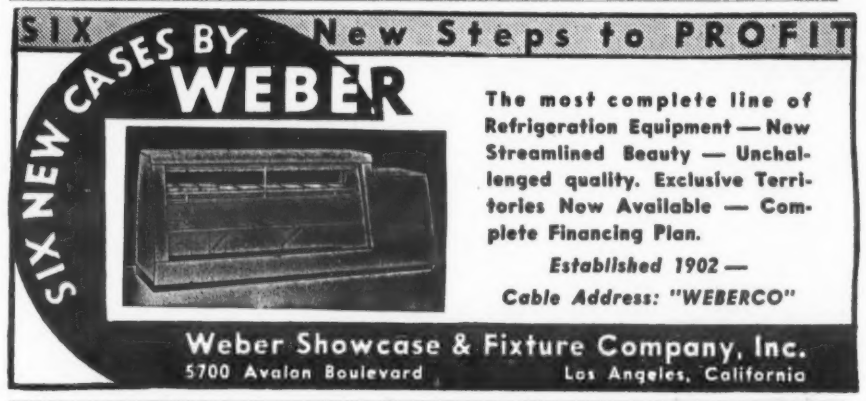
31 Conditioning Jobs Sold by Oklahoma Utility in July

OKLAHOMA CITY — Thirty-one air-conditioning jobs, 13 air washers, and a number of coolers were sold by the commercial refrigeration department of the Oklahoma Gas & Electric Co. during the month of July.

Syracuse Area (Compiled by Niagara Hudson Public Service Co.)

Name	Make	Hp.
Industrial Applications		
Syracuse Fruit Co.	Carrier	8.0
Offices		
First Trust & Deposit Co.	Carrier	5.0
Residences		
1—5 Star Home	York	3.0
1—5 Star Home	Kelvinator	1.0
Restaurants and Bars		
Hotel Syracuse Rainbow Room	Carrier	35.0
Century Club	Carrier	6.0
Liggett's Drug Store	Carrier	11.5
Clothing & Department Stores		
Wade's Apparel Shop	Carrier	12.0
Park-Brannock Shoe Co.	Carrier	9.0
Wells & Coverley (Addition)	Carrier	2.0
LaChalfonte	Carrier	12.0
Howard Clothes	York	5.0
Lerner's	Westinghouse	34.5
Jewelry Stores		
Wilson's	Carrier	6.5
Theaters		
Eckel Theater	Carrier	40.0
Retail Stores		
Fannie Farmer	Westinghouse	1.6
Fannie Farmer	Westinghouse	1.6

THE BUYER'S GUIDE


SIX NEW CASES BY WEBER
New Steps to PROFIT
The most complete line of Refrigeration Equipment — New Streamlined Beauty — Unchallenged quality. Exclusive Territories Now Available — Complete Financing Plan.
Established 1902 —
Cable Address: "WEBERCO"
Weber Showcase & Fixture Company, Inc.
5700 Avalon Boulevard
Los Angeles, California

Profit Making
MEAT DISPLAYS
ANOTHER HELP FOR
Sherer Dealers
AND DISTRIBUTORS
"Profit-Making Meat Displays"—a new 32-page booklet tells meat merchants how to get greater profits from their displays.
The Sherer Franchise assures you of complete cooperation from the factory. Write for details about the Sherer Case and Cooler Franchise. Valuable territories still available.
SHERER-GILLETT CO. . . . MARSHALL, MICHIGAN
Display and Storage Equipment for Retail Food Stores

TYLER
TYLER'S
WELDED STEEL Cases
1937 line offers wide variety and sensational values. 6 big new features and iron-clad guarantee. Only Tyler gives one-piece "welded steel" construction, 100% insulation. Wonderful sales opportunity. Most talked of and fastest selling line on market. WRITE today.
TYLER Sales-Fixture COMPANY
Dept. E, NILES, MICHIGAN
SIX BIG NEW FEATURES

COMPLETE AND MODERN
LINES OF COMMERCIAL HARDWARE FOR EVERY APPLICATION
GRAND RAPIDS BRASS COMPANY
GRAND RAPIDS, MICHIGAN

DISTRIBUTORS WANTED
DISTRIBUTORS! Increase your sales and earnings on electrical refrigeration equipment by selling the Percival Line. Percival equipment meets every requirement of the modern food store.
For Mechanical Refrigeration Only
DESIRABLE TERRITORIES still available. Write for details of attractive, profit-making franchise.
C. L. PERCIVAL COMPANY
DES MOINES . . . . . IOWA
51 YEARS OF SERVICE
1886-1937

New Room Spray-Type Humidifying Unit Placed On Market by Rega Mfg. Co.

ROCHESTER, N. Y. — A new spray-type humidifier for buildings heated by steam, vapor, hot water, or warm air has been placed on the market by Rega Mfg. Co., manufacturer of humidifiers, spray nozzles, and oil filters, according to C. H. Ager, president.

The humidifier consists of a metal bowl 14 inches long and 12 inches in diameter mounted on a standard 48 inches high. In the bottom of this bowl is a Rega self-cleaning spray nozzle connected to tubing which runs through the standard and is connected to the city water line. Another piece of tubing is attached to a drain fitting in the bottom of the bowl.

When water is turned on (a pressure of 25 lbs. or more is required), a fine fog spray is forced from the spray nozzle up through the bowl and into the air of the room. Here the spray is absorbed by the air. That which condenses on the inside of the bowl is carried away to the drain.

Spray nozzle operates entirely on city water pressure without use of motor or pump. Water used costs approximately 1½ cents for 24 hours of continuous service, the makers of the device declare.

The humidifier is said to be usable with or without humidity controls. It can be controlled by a solenoid water valve and humidistat, or solenoid valve and windowstat.

It is claimed that this humidifier will humidify adjoining rooms as well as the room in which it is located, providing connecting doors are left open.

The self-cleaning nozzle automatically cleans its orifice by forcing a cleaning pin through this orifice each time the water is turned off. A 100-mesh filtering screen is located in base of nozzle.

The humidifier is available in ivory, aluminum, dark green, and dark gray. It weighs 23 lbs. Retail price, including spray nozzle, water line connection, and fittings, is $18.95.

Holmes Conditions Theater

SUPERIOR, Wis.—A. E. Holmes & Bros. Co. has installed air conditioning in the remodeled Palace theater here.

Akron Beauty Shop Conditioned

AKRON, O.—Dan H. Willis Co. has installed Carrier air conditioning in the Miriam Beauty Shoppe here.

91 Cooling Installations Made in Kansas City Area in 5 Months

KANSAS CITY — Ninety-one installations of air-conditioning equipment were made in the Kansas City territory during the first five months of this year, according to reports made to the Air Conditioning Council of Kansas City, an association of local air-conditioning distributors and dealers cooperating with Kansas City Power & Light Co., public utility.

Aggregate load of installations to May 31 is approximately 2,100 hp., as compared with 2,200 hp. during the entire year of 1936. Other installations in order or partially completed at the time of the tabulation will raise the 1937 total to about 3,300 hp., officials of the Air Conditioning Council believe.

General offices, with 31 installations reported, lead all classes for the five-month period. Hotels and restaurants, with 19 installations, are next, and stores and shops and miscellaneous business houses are closely bunched with 15 and 14 installations, respectively.

Residential air-conditioning jobs installed in the territory during the period number 13, and two private offices have been equipped with conditioning to complete the total. Home and private office systems are not published by the council under individual names because most of the jobs sold were room coolers, and the users are logical prospects for complete air-conditioning systems later.

Group Inspects Gimbel Bros. Installation

PHILADELPHIA — An inspection of the air-conditioning system of Gimbel Bros. store, preceded by a dinner in the store's dining room, was conducted Sept. 15 under the sponsorship of the Electrical Association of Philadelphia.

George R. Conover, managing director of the association, was chairman of the evening's program. Speakers at the dinner were: Arthur C. Kaufmann, vice president and executive head of Gimbel Bros.; Charles S. Leopold, consulting engineer who designed and supervised the store's air-conditioning installation; and George E. Whitwell, vice president in charge of sales, Philadelphia Electric Co.

York Equipment Used in Jacksonville Store

JACKSONVILLE, Fla. — Mechanical Cooling Corp., of which S. Z. Downs is president, installed York air conditioning in the new shoe store of Butler's, Inc.

J. E. Laughlin Appointed Wichita Airtemp Dealer

WICHITA, Kan.—J. E. Laughlin, 749 South Spruce St., has been appointed dealer for The Midwest Airtemp Corp. to sell the complete line of Chrysler Airtemp air-conditioning and heating equipment.

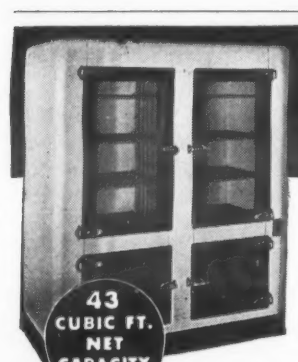
Izard Leases Space for Sheet Metal, Conditioning Work

KANSAS CITY, Mo.—Thomas L. Izard has leased 5,000 sq. ft. of floor space at 517 Delaware St. to house his sheet metal and air-conditioning business.

Indianapolis Area (Compiled by Indianapolis Power & Light Co.)

Name	Make of Equipment	Hp.	Tonnage
Barber Shop			
Columbia Club Barber Shop, 121 Monument Circle	Climax	2.0	2.2
Club Room			
Bowman Elder (replacement), 350 N. Meridian St.	General Electric	1.0	1.0
Funeral Homes			
Farley Funeral Home, 1604 W. Morris St.	Climax	2.0	2.2
Flanner & Buchanan, 25 W. Fall Creek Bl.	Frick	26.0	15.0
Hermann Funeral Home, 1505 S. East St.	Climax	4.0	4.4
Hospitals			
Methodist Hospital, 1604 N. Capitol Ave.			
Addition to system	Frigidaire	33.0	28.0
Addition to system	Frigidaire	3.0	3.0
Patient room	Climax	0.5	0.6
City Hospital, 960 Locke St.	Carrier (gen. own power)	33.0	38.0
Industrial Applications			
Frozen Produce Co., 601 Fulton St.	York	10.0	8.0
Omar Baking Co., 901 E. 16th St.	Lipman	8.0	8.0
Offices, General			
Advance Independent Electrotype, 730 E. Washington	Kelvinator	4.0	3.5
Advance Paint Co., 525 W. Abbott St.	Kelvinator	18.0	15.0
Banner Whitehill Co., 31 S. Meridian St.	Frigidaire	3.5	3.0
Guarantee Tire & Rubber Co., 211 S. Illinois St.	York	5.75	5.0
W. J. Holliday & Co., 525 W. McCarty St.	Climax	2.0	2.0
Addition to system	Climax	10.75	12.1
Indiana Oxygen Co., 435 S. Delaware St.	Carrier	12.0	10.0
Inland Container Corp., 700 W. Morris St.	York (combination sys.)	47.5	25.0
Link-Belt Co., 515 N. Holmes St.	Airtemp	18.0	22.0
Milligan Oil Burner Co., 1553 N. Meridian.	Airtemp	3.0	3.0
Refrigerating Equipment Corp., 931 N. Meridian St.	Frigidaire (addition)	5.0	5.0
U. S. Corrugated Box Co., 1409 Roosevelt	Lipman	23.0	10.0
Offices, Private			
American States Insurance Co., 542 N. Meridian St.	General Electric	1.0	0.7
Anderson Chevrolet Co., 3759 N. Illinois St.	Frigidaire	1.0	1.0
Ertel Machine Co., 1420 E. 20th St.	Climax	1.0	1.1
Hume-Mansur Bldg. Co., 23 E. Ohio St.	Carrier (air cooled)	0.75	0.7
Ideal Furniture Co., 227 W. Washington St.	Climax	0.5	0.6
Metal Auto Parts Co., 1428 W. Henry	General Electric	1.5	1.5
J. W. Mull, Jr., 839 Architects Bldg.	Climax	1.0	1.1
Sanborn Electric Co., 309 N. Illinois St.	Westinghouse	1.6	1.0
V. E. Sprouse, 739 E. Market St.	Climax	1.0	1.1
Dr. Robert K. Walker, 710 E. 46th St.	Climax	0.5	0.6
York & Foster Co., 227 W. Washington St.	Climax	0.75	0.9
Residences and Room Units			
Carl E. Bick, 5707 Washington Blvd.	Carrier (air cooled)	0.75	0.7
J. C. Consodine, 5560 Washington Blvd.	Frigidaire	0.75	0.75
Warren Curry, 1001 College Ave., No. 314	Climax	0.75	0.9
C. A. Edwards, 4156 N. Meridian St.	Kelvinator	1.5	1.5
P. P. Effroymson, 2809 N. Pennsylvania St.	General Electric	0.5	0.5
Omar S. Hunt, 5737 Wildwood Ave.	Frigidaire	3.25	3.0
Lincoln Hotel, Room 917, 117 W. Wash'ton	Climax	0.5	0.6
T. A. Myers, 28 N. Webster St.	Climax	0.5	0.5
Mr. Reed, 5156 N. Illinois St.	Airtemp	3.0	3.0
G. W. Sanborn, 4701 Michigan Rd.	Westinghouse	0.75	0.75
Howard Schurmann, 3540 N. Pennsylvania	Climax	0.5	0.6
Restaurants			
Canary Cottage, 48 Monument Circle	Westinghouse (evap. con)	43.0	35.0
Charley's Restaurant, 144 E. Ohio St.	Frigidaire (addition)	10.0	10.0
Claypool Coffee Shop, 108 W. Washington	Frigidaire	25.0	20.0
Downey Flake Doughnut Shop, 136 Monument Circle	Airtemp	6.0	6.0
Ruch Doughnut Shop, 105 N. Illinois St.	Airtemp	3.0	3.0
Stratford Hotel Restaurant & Bar, 126 W. Market St.	General Electric	11.5	10.0
Stores			
Argus-Yaver Haberdashery, 36 N. Pen'vania	Climax	1.0	1.1
Baker's Shoe Store, 38 W. Washington St.	York	13.0	10.0
Burts' Shoe Store, 39 E. Washington St.	York	11.0	10.0
Florsheim Shoe Shop, 2 E. Washington St.	Carrier	5.25	5.0
W. T. Grant Co., 25 E. Washington St.	Carbondale	73.0	60.0
Indiana Fur Co., 29 E. Ohio St.	Frigidaire (addition)	10.5	10.0
H. H. Mayer, Inc., 42 W. Washington St.	Carrier	18.0	15.0
R. & H. Miller Dress Shop, 26 W. Wash'ton	Frigidaire (evap. con.)	47.0	40.0
Maud Muller Candy Shop, 102 Monument C.	Frigidaire	1.5	1.5
Sears, Roebuck & Co., 351 N. Alabama St.	York	268.0	160.0
H. P. Wasson Co., department store, 2 W. Washington St.	Carrier (addition)	3.0	0.0
Studios			
W. S. Busey, photographer, 17 E. Joseph	Kelvinator	0.5	0.5
WFBM Studios, 48 Monument Circle	Westinghouse	9.0	8.0
Theaters			
Alamo, 152 N. Illinois St.	(well water system)	7.5	0.0
Cinema, 213 E. 16th St.	(well water system)	12.5	0.0
Emerson, 4630 E. 10th St.	(well water system)	10.0	0.0
Fountain Square, 1104 Prospect St.	(well water system)	45.0	0.0
Irving, 5507 E. Washington	(well water system)	15.0	0.0
Oriental, 1105 S. Meridian St.	(well water system)	37.5	0.0
Ritz, 3430 N. Illinois St.	(well water system)	7.5	0.0
St. Clair, 800 Ft. Wayne Ave.	(well water system)	30.0	0.0
Strand, 1332 E. Washington St.	(well water system)	22.5	0.0
Talbott, 2145 N. Talbott Ave.	Westinghouse	25.5	15.0
Totals		1,070.60	669.20

THE BUYER'S GUIDE

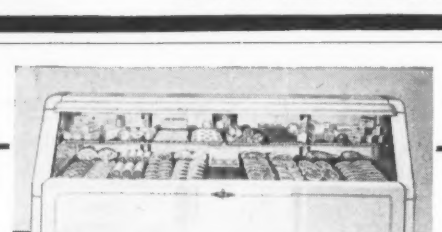


TYLER'S WELDED STEEL REACH-IN BOX

SALES SENSATION OF 1937

Big waiting market for food stores, restaurants, bakeries, tap rooms. New principle "Stratosphere" coiling. Maximum efficiency and capacity in small floor space. Dealers report tremendous demand. Big sales opportunity. Write today.

TYLER Sales-Fixture COMPANY
DEPT. EX. NILES, MICHIGAN



The HOLCOMB & HOKE
NEW DEALER PLAN—

offers you an exclusive franchise which includes a complete line of Dulux and porcelain cases—market coolers and boxes . . . priced to meet all competition.

Our New Dealer Finance Plan advances you more cash per sale.

We furnish the products and finance the sales.

All We Ask You to Do Is SELL!

Write, Wire or Phone At Our Expense for Full Particulars.

HOLCOMB & HOKE MFG. CO.
1545 E. Van Buren St. Indianapolis, Indiana

NEW KOCH ECON-O-CASE

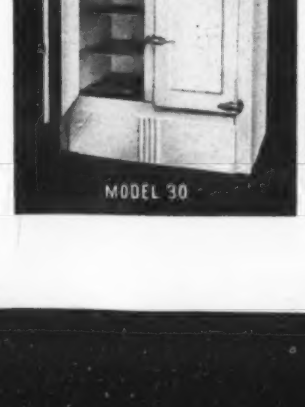
WELDED ALL-STEEL CONSTRUCTION
CORKBOARD INSULATION
TRIPLE GLAZING

THE PRICE LEADER OF A BIG LINE

DISTRIBUTORS WILL BE INTERESTED

WRITE TODAY KOCH REFRIGERATORS
NORTH KANSAS CITY, MO.
EXPORT DEPT. 304 E. 45TH ST. N.Y. CITY

New "SELF CONTAINED" REFRIGERATORS

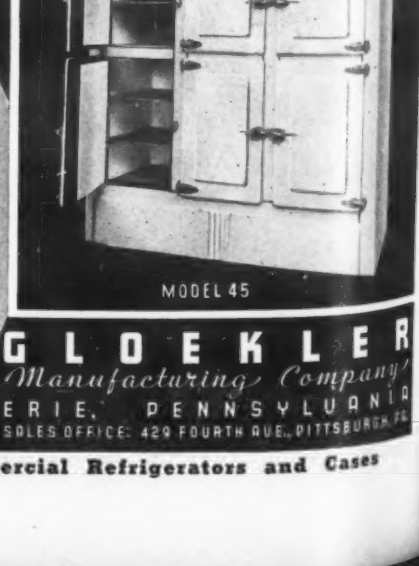


---are available in either 30 or 45 cubic feet capacity, with electric unit mounted in bottom of cabinet.

CAPACITY is a real essential today; and here are two refrigerators, especially built to give the maximum in storage space. The two lower compartments of the Model 30 will accommodate 14 cases of beverage conveniently; the three lower compartments of the Model 45 have ample space for 21 cases---plus enough room for meats and dairy products, too.

Sold thru Distributors only. Write for Folder 3045.

SPECIAL DESIGNS BUILT TO ORDER



GLOEKLER Manufacturing Company
ERIE, PENNSYLVANIA
SALES OFFICE: 429 FOURTH AVE., PITTSBURGH, PA.

Manufacturers of All Types of Commercial Refrigerators and Cases

Electric Kitchen Display Units Help Both Single and Group Sales for Detroit Dealer

By Winifred B. Hughes

DETROIT—Two electric kitchen displays—one in the back-center of the showroom floor, the other in the show window—have been important contributors to both kitchen and single appliance sales for Appliances, Inc., Westinghouse dealer on Detroit's east side, reports E. P. "Pat" Ryan, co-owner.

Seven salesmen are employed by the company. They don't do much straight cold canvassing, but one of their prospect-getting methods is noting houses displaying ice cards throughout the territory.

"The library is just down about a block, so it's a simple matter for them to write down the addresses where they see a card, and then check the city directory at the library to get the names of persons living in the houses," Mr. Ryan explained.

Women have been canvassed so much in their homes that they can't be bothered with door-to-door salesmen, Mr. Ryan believes. So his store's policy is to drop post cards to people with ice cards in their windows, telling them that a company representative will call within the week.

"Then the salesman takes some gadget to give the housewife like this "Mark-it-er" (a circular shopping guide sheet with holes for marking groceries needed, Westinghouse promotion), or some other prospect premium. They provide good door openers."

Discussing the class of prospects to whom the store sells, Mr. Ryan said:

"I take care of the Italians, and Mr. Kramer, my partner, sells the Germans.

"We've found that it works out better to have an English-speaking salesman work with the Italians than salesmen of their own race, because they have been 'gypped' so many times by their own people since they came here, that they no longer will trust them.

"They are a very clannish people to sell to, and you can always tell if you've made the sale. Usually the mother will come into the store dragging one of the kids, just to look over the box. Then later, she'll come back with the whole family.

"Why I've had as many as 15 file in here to see the refrigerator on a single sale."

While refrigeration sales are very slow, range sales—and especially electric range sales—are, well Mr. Ryan says, "We can't get ranges fast enough to fill the demand."

Sales of electric ranges are at present outstripping those of gas ranges, Mr. Ryan says. The one big disadvantage of selling electric ranges, however, is that the Detroit Edison Co. will only make two installations for one customer, Mr. Ryan said.

"Then if the range owner moves, he has to pay for having the range installed in the house to which he moves, and it costs around $25."

Detroit Edison Co. wires the house for the new range, and sends a home service worker out to show the housewife how to get the best use out of it, and this, in this dealer's opinion, is a decided aid in selling.

Centering the store appliance display, a planned kitchen set-up with Westinghouse refrigerator, a gas range, sink and work top shelf units, and another planned kitchen in the display window, have proved to be big drawing cards, Mr. Ryan said.

The window display especially has attracted customers, and the store has sold "two or three dozen" of the kitchens just through the window display, said Mr. Ryan, who had a prospect for a kitchen waiting for him while he talked to us.

* * *

Factory Lay-offs Hurt Wellensiek's Sales

Factory lay-offs of Ford and Chrysler employes living on the east side of Detroit curtailed summer refrigeration sales, according to A. H. Kunert of Wellensiek Music House, Norge and Frigidaire dealership.

Wellensiek Music House, which is located near a busy intersection at Gratiot and Mack Aves. here, was one of the pioneer east side dealers in the radio business, and has been handling Norge for a number of years and Frigidaire refrigerators for the last two, Mr. Kunert said.

Originally a predominately German neighborhood, the district now also contains a large Italian and Negro population, we learned.

"We sell to the daughters and sons of our old phonograph and piano customers, without any solicitation other than sending them direct-mail pieces now and then," he declared.

Commemorating its twenty-sixth year in business, the store is getting out a four-page advertising folder. Front page of the piece will picture the store, and tell about its growth. Inside pages will feature appliances and radios, and final page is to set up the store's service features.

Mr. Kunert showed us a series of pictures which told the story of the music store's progress from a straight musical product store to the well stocked appliance and music store that it is today. Now the store has a central section of refrigerators and ranges, with radios flanking one wall, and appliances the second.

"The one rule that we put above all others is: after an article is sold, go into the home within 30 days to see if the customer is satisfied. Dealers often neglect that point, and that's how you get sales.

"For instance, if you've sold a box and call back and ask Mrs. Jones if she likes her new refrigerator, and she says: 'Well yes, but that noise doesn't seem just right to me, what do you think about it?' And you check up on it for her, or if necessary call the factory on the servicing, then you can easily ask if she'd like to recommend anyone else who needs a refrigerator.

"I can trace back 30 sales that resulted from making call-backs on the first one," the dealer stated.

"Every sale ought to lead to about 10 additional ones within a period of a few years," this dealer believes.

Sales of gas ranges right now are pretty good, but electric range sales are "terrible," Mr. Kunert said. It's particularly difficult to sell electric ranges to the store's Italian prospects, he stated. "Unless they can see the flame, they think the stove isn't working right."

Speaking of the store's policy on trade-ins, Mr. Kunert said:

"There is a factory trade-in allowance on some refrigerators, and we add what we actually think we can get by reselling the trade-in box."

Demand for used refrigerators is great in this section of the city, and getting rid of trade-in models is a simple process, we were told.

Mr. Kunert, who is a member of the board of the Detroit Appliance Dealers Association, said that the organization is endeavoring to tie-in with the Michigan Fair Trade Act provisions in working out the price-cutting evils in Detroit.

* * *

Super Appliance Co. Adds Men for Fall

Although Super Appliance, Inc., 6300 Gratiot Ave., has been opened only five months, already it has enlarged its quarters to almost twice their original size, and divided half of the total space for radios, and the other for appliances.

Kelvinator, Norge, Frigidaire, and Leonard refrigerators are sold, and the radio line when complete will include Philco, RCA-Victor, Zenith and Detrola, O. Small, one of the co-owners of the store, told us.

The store is looking forward to doing a bang-up fall selling business, and one of the plans to promote it will be to increase man power, Mr. Small said. Four salesmen, each of whom works four and a half days outside, one on floor duty, and one evening on the floor, are now employed.

The extra manpower will be added as a substitute for continuing advertising in community papers.

CLASSIFIED ADVERTISING

RATES: Fifty words or less, one insertion, $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning and Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

OPPORTUNITY FOR EXPERIENCED ELECTRICAL ENGINEER WITH COMPLETE KNOWLEDGE OF ELECTRIC RANGE DESIGN AND MANUFACTURE. REPLY SHOULD GIVE COMPLETE DETAILS EDUCATION, PRACTICAL EXPERIENCE, SALARY EXPECTED. BOX 975, AIR CONDITIONING AND REFRIGERATION NEWS.

SALES ENGINEER calling upon commercial refrigerator manufacturers on west coast. To the right man exclusive representation will be given to a basically new cooling unit for display cases and reach-ins having no competition and performance never before obtained. Give full information first letter. BETZ CORPORATION, Betz Building, Hammond, Indiana.

ONE OF THE MOST AGGRESSIVE and fastest growing manufacturers of refrigeration controls and accessories in the Middle West is interested in a sales engineer. Somewhere there is a young engineer experienced and interested in refrigeration controls and accessories who feels there is an opportunity beyond his present one. For this man there is an opportunity in proportion to his ability to work, produce, and learn. Please write completely and send photograph if possible. All replies confidential, write. AUTOMATIC PRODUCTS CO., Milwaukee, Wis.

POSITIONS WANTED

DEALER, DISTRIBUTOR, or MANUFACTURER: Are you in need of a man, college trained, experienced as a salesman, supervisor, sales manager, in household electric equipment. Experienced in sales promotion, advertising, and the hiring and training of salesmen. Will consider location with financially sound organization. Box 977, Air Conditioning and Refrigeration News.

BUSINESS OPPORTUNITY

BUSINESS OPPORTUNITY—Electric appliance dealer wishes to sell business. Attractive store located in fast-growing Los Angeles district; equipped with modern fixtures and all-electric model kitchen. Lower Boulder Dam rates now make possible splendid opportunities in electric range and water heater field. Box 978, Air Conditioning and Refrigeration News.

ILLNESS COMPELS ME to sacrifice my business, $4200.00 for quick sale. Complete shop and service employing 5 men at present. Customer list of approximately 2,500. Also installing and servicing for 6 companies. Salable equipment, tools and parts will inventory $3,000.00. Town of close to 1,000,000 population. Good location. Hurry. Box 979, Air Conditioning and Refrigeration News.

FRANCHISES AVAILABLE

DISPLAY CASES, WALK-IN COOLERS, and a complete line of Reach-In Boxes and Market Equipment. Will offer a franchise to commercial dealers. Long discounts with financing arrangements. To increase your commercial volume, write today for complete information. FOGEL REFRIGERATOR COMPANY, 16th & Vine Sts., Philadelphia, Pa.

COMMERCIAL DEALERS WANTED to sell our complete line of Refrigerator Display Cases, Walk-In Coolers and Refrigerators for Meat Markets, Grocers, etc. Sell with Ehrlich Line of Compressors or with your present line of machines. Attractive discounts, also financing arrangements to help sell, if desired. Write for catalog and full information. H. EHRLICH & SONS MFG. CO., Station D., St. Joseph, Mo.

EQUIPMENT FOR SALE

ATTENTION! SERVICEMEN and Dealers: New Delco ⅛ hp. single phase, 60 cycle, rubber mounted motors $7.45. ⅛ hp. condensers $1.15, ¼ hp. $1.50. Mullins Evaporators, 3 tray $4.50, 4 tray $5.25. Universal compressors $27.50—worth twice that. Special quantity prices on request. Write for complete catalog of supplies. We reserve the right to limit quantities on the above specials. AIRO SUPPLY COMPANY, Eastern office, 17 W. 60th St., New York, N. Y. Main office, 2730 N. Ashland Ave., Chicago, Ill.

KNIGHT ICE CREAM FREEZER, 5 gallon capacity, 60 gallon hardener. Reconditioned 2 hp.—F-12 Frigidaire compressor. A.1. condition. Priced for quick sale, $650.00 F. O. B. Cleveland, Ohio. ECONOMY REFRIGERATION & REPAIR CO., 1703 W. 25th St., Cleveland, Ohio.

WE HAVE ON HAND brand new, in original crates, several Larkin vacuum plate coils 7" and 16" wide and 80", 104" and 128" long which we offer at from ¼ to ⅓ of list price and subject to prior sale. We solicit your inquiry by wire, phone, or letter. A real bargain is offered in this type of coil for anyone interested. HOLCOMB & HOKE MFG. CO., 1545 Van Buren St., Indianapolis, Ind.

BAKER MODEL 60—7A compressor with 10 hp. Howell 3 phase 220 volt motor and starter with wall type condenser and receiver. Good running order, about 3 years old, $200. Lipman ammonia self contained watercooled 1½ hp. with G-E 230 volt DC motor and automatic starter. Good running order, $90. J. LAZAR, c/o Westinghouse Electric Supply Co., 228 N. La Salle St., Chicago, Ill.

ATTENTION SERVICE MEN! Do you have an extra or spare Frigidaire compressor body? Can supply the following models at once. These may be had either reoperated and guaranteed or as is. Models Twin S, G, K, O, L, Y, N, C. Also sump tanks for all models. Can supply a limited amount of motors 110, 220, 60 cycle, from a ¼ hp. to a 1 hp. Prices for above items may be had on request. REFRIGERATION SURPLUS JOBBERS, 5622 Woodland Ave., Cleveland, Ohio.

REPAIR SERVICE

DOMESTIC REFRIGERATION controls repaired. Ranco pencil types, $1.75. General Electric, Cutler-Hammer, Tag, Penn, Ranco box types, $2.00. Bishop Babcock, Majestic, Penn magnetic switches, $2.50. Each control individually calibrated to factory specifications. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th St., New York City.

CONTROLS REPAIRED for the refrigeration and air-conditioning trade. Any make, almost any type. Every control individually calibrated. Steam traps, packless valve glands, and regulators repaired. If it contains a bellows, Halectric can repair it. Service prompt, prices right, guarantee reliable. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

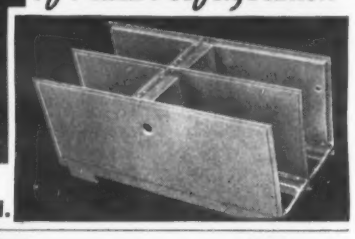
PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

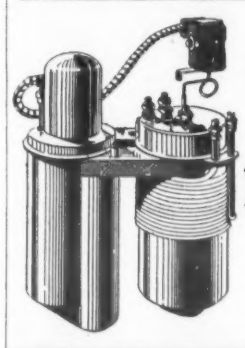
THE BUYER'S GUIDE

KOLD-HOLD
ICE CREAM CABINET CONVERSION UNITS
Modernize old equipment . . provide much greater storage space for packaged goods . . eliminate brine leaks and attendant odors . . reduce weight and simplify installation . . require a minimum of service . . provide ideal temperatures under all conditions . . cost less to operate . . quickly and easily installed in any standard cabinet at small cost.

As Outstandingly Superior as the **KOLD-HOLD** *System of Truck Refrigeration*

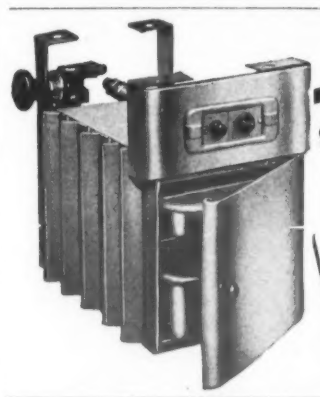


Write for Complete Facts
KOLD-HOLD MFG. CO. - LANSING, MICH.



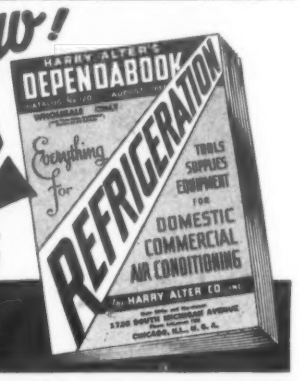
COLTROL
DIAL IN THE TEMPERATURE YOU WANT
LIQUID COOLER
A Source of Quick Profits
Easiest to sell. For beer, root beer, water, carbonated drinks, etc. Fits standard beer coil box. Perfect foam control. Accurate. Costs less to install and operate. Permits steam or chemical cleaning of beer coils. All refrigerants.
COMMERCIAL COIL & REFRIGERATION CO.
457 NORTH ARTESIAN AVENUE, CHICAGO, ILLINOIS
. . SEE YOUR JOBBER OR WRITE DIRECT . .

QUICK SERVICE
PARTS · SUPPLIES · TOOLS
for Refrigeration-Air Conditioning
DEPENDABLE ITEMS FOR ALL YOUR NEEDS
Save Money and Time—Our Complete Stock Assures Prompt Service.
WRITE TODAY for NEW CATALOG
Airo SUPPLY COMPANY
CHICAGO: 2732 N. ASHLAND AVE.
NEW YORK: 17 WEST 60th ST.



STANDARD FAST-ICE EVAPORATORS
All copper and brass construction. Continuous ⅜" copper tubing metallically bonded above and beneath each tray. Side fin walls and hangers riveted to sleeves. Stainless steel doors and control plates. Silver satin finish. A consistently superior product.
Write for price and specifications
Bulletin No. 101
STANDARD REFRIGERATION CO.
9 So. Clinton St. Chicago, Ill.

HARRY ALTER'S 1937 Catalog of Air Conditioning and Refrigeration Parts and Supplies..
it's new!
SEND FOR IT NOW!
We protect the Dealer Write on your letterhead



THE HARRY ALTER COMPANY
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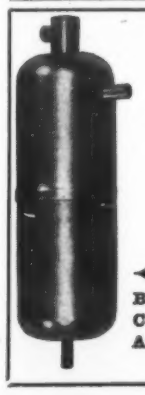

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Air Conditioning Made Easy — By 7. O. Jordan

Computing Latent Loads in Selecting Domestic Cooling Equipment

SECTION NO. 20-A

The Domestic Load And Estimate

Latent Loads

For the light occupancy residential project it isn't necessary to compute the latent load. This does not mean that the latent load is omitted; it means merely that the latent load upon the light occupancy project is so light that the usual air-conditioning coil, when operating under practicable conditions, must do more latent work than is required in order to accomplish the required sensible work. Therefore, since the latent load on the light occupancy project will be less than the latent capacity developed in any event, there is no need to estimate it.

Latent loads are light on this class of project because but few people are present so that but little moisture is given off, and but little moist outside air is required for ventilation, and because no cooking is done in the living quarters.

Since the refrigerating unit must carry the load resulting from the actual latent work done by the air-conditioning coil whether it is computed or not, it may appear at first thought that it would be necessary to compute the latent load in order to determine the total load upon the refrigerating unit.

However, this is false reasoning, because the refrigerating unit must carry the load resulting from the latent work actually *accomplished* by the air-conditioning coil, not the work which it has been *told* to do by computation.

Therefore, it is necessary only to estimate the sensible load, and select an air conditioner which will accommodate this sensible load. However, the refrigerating capacity of the refrigerating unit must be equal to the total (sensible plus latent) work which the performance tables for the air conditioner indicate that it will do under the entering air conditions of the project.

If the air-conditioning unit were to be operated at the comparatively high refrigerant temperature at which the latent and sensible capacities would be exactly proportioned to this type of load, it would be necessary to use a very large coil, and to circulate a very great quantity of air in order to develop the required total capacity. The large coil would be expensive, while the large quantity of air would be expensive and would result in a "drafty" condition.

Furthermore, although condensing unit capacities are higher at higher operating temperatures, condensing unit performance may become unsatisfactory in other respects if the operating temperature is excessive.

Operating temperatures corresponding to a suction pressure of approximately 40 lbs. per square inch (with Freon) result in very satisfactory operation when both condensing unit performance and air-conditioning unit performance are considered. At this suction gas pressure the proportion of the latent work to the sensible work of the properly designed air-conditioning coil is higher than the proportion of latent to sensible load encountered in the residential field.

Therefore, if direct-expansion equipment is selected at 40 lbs. suction pressure (and chilled water equipment is selected at 45° water), and if the equipment is selected so that its cooling capacity is equal to the entire cooling load estimated as described above, then we may rest assured that not only will the dry-bulb temperature within the conditioned space be held at the desired level, but that humidity will be held well within the comfort level also.

Thus, the fact that these operating refrigerant temperatures result in a surplus of latent capacity becomes a factor of safety which makes certain that an undesirable rise in humidity will be prevented when the running time of the equipment has been shortened during periods of low cooling load.

In this way a positive "inherent" control of humidity is obtained without the use of expensive humidity controls. With this method of equipment selection the latent load is *not* omitted or ignored. It is included in a way that renders latent computation unnecessary.

However, if desired, latent load may be estimated by the methods and tables given in Section 20.

Summary

The foregoing explanations and directions may be summed up as follows:

A. *"Room by Room" Method*

1. Compute maximum transmission plus sun load on each room by Table 30.

2. Compute maximum sensible outside air load for each room from Table 31.

3. Compute maximum sensible occupancy load for each room by multiplying the occupants by 250.

4. Compute heat of appliances for each room, if any heat sources of importance exist within the conditioned space.

5. Determine the maximum simultaneous sensible load upon the entire project by summation of the sensible loads upon the various rooms, remembering that maximum sun loads, occupancies or appliance loads as computed for each room cannot occur at the same time.

6. Select an air conditioner with a sensible capacity at 40° to 45° average refrigerant or water temperature that is as great as the maximum simultaneous load upon the entire project.

When selected in this way, the properly designed air conditioner will have ample latent capacity to accommodate the light occupancy project. However, if desired, the latent load may be computed as described in Section 20, and the result checked against the latent capacity of the air conditioner as selected.

7. Select a refrigerating unit whose refrigerating capacity at a suction pressure two or three pounds lower than the refrigerant pressure in the suction header of the air conditioner, is as great as the total (sensible plus latent) capacity of the air conditioner at the conditions under which it is to operate.

When selected in this way, the refrigeration unit will have ample capacity to carry both the sensible and the latent loads of the light occupancy project.

8. Determine the required air delivery to each room by one of the following methods:

A. Proportion the air delivery of the air conditioner selected among the rooms according to their respective sensible loads.

B. By the use of the formula

$$A = \frac{Hs \times Vol}{TD \times 15}$$ where

A = Air required in c.f.m.

Hs = Sensible load on room in B.t.u./hr.

Vol = Cu. ft. per lb. of air at entry air condition.

TD = Temperature differential between room and entering air (generaly about 20°).

C. Approximate the air required for a room by multiplying its floor area in square feet by 0.6 to 0.8 depending upon its size and insulation.

9. Size duct from tables 28 and 33, and size grilles from tables 32 and 34, or by allowing delivery velocities of 300 to 500 feet per minute for supply grilles above head height,

(*Continued on Page 19, Column 1*)

Table 33

Pipe Sizes for Gravity Hot Air Heating Systems

(Note: Pipe Sizes Are Standard Factory Made Sizes.)

Floor Above Furnace	Load on Pipe (B.t.u./Hr.)	Duct Size in Inches Round Duct	Rectangular Duct
REGISTER TEMPERATURE—175° F.			
First Floor	0— 2900	6″ Diameter	3½ x 10
First Floor	2900— 4000	7″ Diameter	3½ x 12
First Floor	4000— 5200	8″ Diameter	3½ x 14 or (5½ x 10)*
First Floor	5200— 6700	9″ Diameter	5½ x 12
First Floor	6700— 8200	10″ Diameter	5½ x 14
First Floor	8200—11900	12″ Diameter	*4000—5800 B.t.u.
Second Floor	0— 4700	6″ Diameter	3½ x 10
Second Floor	4700— 6400	7″ Diameter	3½ x 12
Second Floor	6400— 8500	8″ Diameter	3½ x 14 or (5½ x 10)*
Second Floor	8500—10900	9″ Diameter	5½ x 12
Second Floor	10900—13300	10″ Diameter	5½ x 14
Second Floor	13300—19200	12″ Diameter	*6400—9350 B.t.u.
Third Floor	0— 5800	6″ Diameter	3½ x 10
Third Floor	5800— 7900	7″ Diameter	3½ x 12
Third Floor	7900—10400	8″ Diameter	3½ x 14 or (5½ x 10)*
Third Floor	10400—13300	9″ Diameter	5½ x 12
Third Floor	13300—16200	10″ Diameter	5½ x 14
Third Floor	16200—23500	12″ Diameter	*7900—11400 B.t.u.
REGISTER TEMPERATURE—160° F.			
First Floor	0— 2200	6″ Diameter	3½ x 10
First Floor	2200— 3000	7″ Diameter	3½ x 12
First Floor	3000— 4000	8″ Diameter	3½ x 14 or (5½ x 10)*
First Floor	4000— 5100	9″ Diameter	5½ x 12
First Floor	5100— 6200	10″ Diameter	5½ x 14
First Floor	6200— 9000	12″ Diameter	*3000—4400 B.t.u.
Second Floor	0— 3900	6″ Diameter	3½ x 10
Second Floor	3900— 6300	7″ Diameter	3½ x 12
Second Floor	5300— 7000	8″ Diameter	3½ x 14 or (5½ x 10)*
Second Floor	7000— 8900	9″ Diameter	5½ x 12
Second Floor	8900—10900	10″ Diameter	5½ x 14
Second Floor	10900—15800	12″ Diameter	*5300—7700 B.t.u.
Third Floor	0— 4600	6″ Diameter	3½ x 10
Third Floor	4600— 6300	7″ Diameter	3½ x 12
Third Floor	6300— 8300	8″ Diameter	3½ x 14 or (5½ x 10)*
Third Floor	8300—10600	9″ Diameter	5½ x 12
Third Floor	10600—13300	10″ Diameter	5½ x 14
Third Floor	13300—18800	12″ Diameter	*6300—9100 B.t.u.

Note: The above sizes are for horizontal leader pipes not to exceed 8 ft. in length. For every additional 2 ft. in length use next larger size of pipe.

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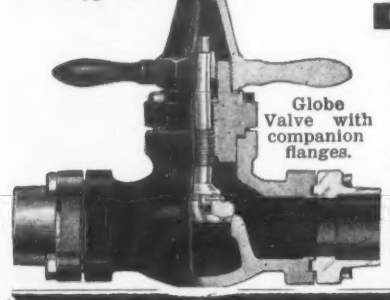

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'Entire Installation' Method of Selection; Chilled Water & Heating Equipment

(*Continued from Page 18, Column 5*)

using the lower velocities for smaller residential rooms or offices, and the higher velocities for larger rooms.

10. Select refrigerant tubing from tables 26 and 27.

B. *Entire Installation Method*

This method is more simple, but generally somewhat less accurate than method "A."

1. Compute maximum transmission plus sun load for the entire project by table 30.
2. Compute maximum sensible outside air load on entire project from table 31.
3. Compute maximum sensible occupancy load by allowing 250 B.t.u. per hour per occupant.
4. Compute heat from appliances if heat from such sources is permitted to enter the conditioned space.
5. Select an air conditioner whose sensible capacity at 40° to 45° average refrigerant or water temperature is as great as the sum of the above simultaneous sensible loads.

When selected in this way, the properly designed air conditioner will have ample latent capacity for the light occupancy project. However, if desired, the latent load may be computed and checked against the latent capacity of the air conditioner as selected.

6. Select a refrigerating unit whose refrigerating capacity at a suction pressure two or three pounds lower than the refrigerant pressure in the suction header of the air conditioner, is as great as the total (sensible plus latent) capacity of the air conditioner at the conditions under which it is to operate.

When selected in this way, the refrigeration units will have ample capacity to carry both the sensible and the latent loads of the light occupancy project.

7. Determine duct and register sizes from tables 32, 34, and 28 or 29.
8. Select refrigerant tubing from tables 26 and 27.

Chilled Water Equipment

The fundamental rules for selecting chilled water air-conditioning equipment are as follows:

(a) Estimate the cooling load as described above.

(b) Select an air-conditioning unit (or units) whose sensible or cooling capacity at 45° entering water is equal to the cooling load upon the space to be conditioned. The capacity of the air-conditioning unit may be varied, as described above under the method of selection for direct expansion equipment.

(c) Select a water cooler whose capacity is equal to the total (sensible plus latent) capacity of the air-conditioning unit when delivering water 2° colder than the entering water temperature upon which the air-conditioning unit selection was based.

(d) Select a refrigerating unit whose capacity is equal to the capacity of the water cooler at a suction pressure 2 lbs. lower than the suction pressure at the suction gas connection of the water cooler.

(e) Select suction and refrigerant line sizes as described above for the direct expansion system.

(f) Select a circulating pump with the capacity of circulating the quantity of water required by the air-conditioning unit (as given by the performance tables or by allowing 3 to 4 g.p.m. per ton of refrigerating capacity) against the total friction head of the system. This is made up of the following:

1. Friction through cooler.
2. Friction through air condenser.
3. Friction through piping.

Table 34

Standard Grille Sizes of Directional Type Grilles

The following recommendations for outlet velocities are accepted practice:

1. When grilles or registers are installed in the baseboard, or, below the breathing line:

(a) For small rooms, not to exceed 200 feet per minute.

(b) For ordinary size and larger rooms, not to exceed 250 feet per minute.

2. When grilles or registers are installed above the breathing line.

(a) For small rooms, not to exceed 350 feet per minute.

(b) For ordinary size, and larger rooms see Tables Nos. 25 and 32.

When using the higher velocities, due consideration should be given to the design, type of building, and other contingent details.

The grille and register sizes listed in the following table are nominal, or, outlet box dimensions, but the NET FREE AREA is used in determining the following capacities (based on a grille whose net to gross area is 90%).

Grille Size Inches	Net Area Sq. F.	Air Delivery in Cu. Ft. Per Min. at Various Air Velocities in Ft. Per Min. 200	250	300	400	500	600	800	1000	1200	1400	1600	1800	2000
STANDARD SIZES														
10x6	.375	75	94	112	150	187	225	300	375	450	525	600	675	750
12x6	.45	90	113	135	180	225	370	360	450	540	630	720	810	900
14x6	.525	105	131	157	210	262	315	420	525	630	735	840	945	1050
20x6	.75	150	188	225	300	375	450	600	750	900	1050	1200	1350	1500
24x6	.9	180	225	270	360	450	540	720	900	1080	1260	1440	1620	1800
10x8	.5	100	125	150	200	250	300	400	500	600	700	800	900	1000
12x8	.6	120	150	180	240	300	360	480	600	720	840	960	1080	1200
14x8	.7	140	175	210	280	350	420	560	700	840	980	1120	1260	1400
20x8	1.0	200	250	300	400	500	600	800	1000	1200	1400	1600	1800	2000
10x10	.625	125	156	187	250	312	375	500	625	750	875	1000	1125	1250
12x10	.75	150	188	225	300	375	450	600	750	900	1050	1200	1350	1500
14x10	.875	175	219	262	350	437	525	700	875	1050	1225	1400	1575	1750
20x10	1.25	250	312	375	500	625	750	1000	1250	1500	1750	2000	2250	2500
24x10	1.5	300	375	450	600	750	900	1200	1500	1800	2100	2400	2700	3000
SPECIAL SIZES														
12x12	.9	180	225	270	360	450	540	720	900	1080	1260	1440	1620	1800
14x12	1.05	210	262	315	420	525	630	840	1650	1260	1470	1680	1890	2100
18x12	1.35	270	338	405	540	675	810	1080	1350	1620	1890	2160	2430	2700
24x12	1.8	360	450	540	720	900	1080	1440	1800	2160	2520	2880	3240	3600
30x12	2.25	450	563	675	900	1150	1350	1800	2250	2700	3150	3600	4050	4500
14x14	1.225	245	306	368	490	613	735	980	1225	1470	1715	1960	2205	2450
18x14	1.575	315	394	473	630	788	945	1260	1575	1890	2205	2520	2835	3150
24x14	2.1	420	525	630	840	1050	1260	1680	2100	2520	2940	3360	3780	4200
30x14	2.625	525	656	788	1050	1310	1575	2100	2625	3150	3675	4200	4725	5250
18x18	2.025	405	506	608	810	1010	1215	1620	2025	2430	2835	3240	3645	4050
24x18	2.7	540	675	810	1080	1350	1620	2160	2700	3240	3780	4325	4860	5400
30x18	3.375	675	844	1010	1350	1690	2025	2700	3375	4050	4725	5400	6075	6750
36x18	4.05	810	1010	1215	1620	2050	2450	3240	4050	4860	5675	6480	7290	8100

Heating Load

The heating load is made up of two parts, the transmission load and the outside air load.

1. *Transmission Load.* The transmission load is the heat which is lost due to the temperature differential between the dry-bulb temperature inside the conditioned space, and the outside dry-bulb temperature.

To determine the transmission load upon any surface, multiply the area of that surface by the proper factor from Table 30, selected according to the directions with that table. The entire transmission load upon the room or building will be the summation of the loads upon all surfaces.

2. *Outside Air Load.* The outside air load consists of the heat which must be added to the outside air (entering by infiltration) in order to heat it from the outside dry-bulb temperature to the dry-bulb temperature within the conditioned space.

The outside air load is determined by multiplying the volume of the room or building by the proper factor selected from Table 31. If desired, outside air may be allowed to mix with the air entering the air-conditioning unit for delivery to the conditioned space, provided that the amount of outside air so introduced does not exceed that which would enter by natural infiltration, as denoted by Table 31.

This may be done without appreciable increase in load because of the fact that the slight pressure maintained within the conditioned space by the introduction of outside air practically eliminates infiltration.

3. *Summation.* The total heating load is the summation of the transmission and outside air loads.

The capacity of the heating equipment should be 15% greater than the load to shorten the morning heating-up period in very cold weather. If the building is in a particularly exposed location, an additional 5 to 10% should be added.

4. *Humidification.* In order to determine the capacity of the required humidifier in gallons of water evaporated per hour, divide the volume of the room or building by twenty thousand (20,000). This may be expressed by the following equation:

$$GPH = \frac{\text{Volume}}{20{,}000}$$

Heating Equipment Selection

In cases where the air-conditioning equipment already has been selected upon the basis of cooling capacity, the unit which has been selected must be checked for the purpose of finding if its heating and humidifying capacities are sufficient for the load. In any event, the heating and humidifying capacities must not be less than the heating and humidifying loads estimated as described above.

After the proper air-conditioning unit (or units) have been selected, a boiler and oil burner with the proper capacities must be selected from the performance tables, while piping for steam or hot water distribution must be selected from the proper tables in this manual.

A circulating pump must also be selected. This pump must have the capacity of circulating the quantity of water required by the air-conditioning unit as taken from the air-conditioning unit performance tables, against the total friction pressure drop of the system. This friction is composed of the following component parts:

Pressure drop through boiler (or through cooler, if a combination heating and cooling installation is intended).

Pressure drop through air conditioner.

Pressure drop through piping.

Air Distribution

There are three prime factors which must be considered in dealing with air movement in connection with air conditioning.

First, sufficient fresh outside air for ventilation must be either drawn into or allowed to infiltrate into the conditioned space.

Second, sufficient air must be circulated through the air-conditioning coils to enable them to do the work necessary to balance the load.

Third, the conditioned air must be distributed and introduced into the conditioned space in such a way that no discomfort results.

Attendant upon these three factors are many problems of varying degrees of importance which must be solved if the most satisfactory and efficient system is to be obtained. Among these are prevention of undesirable noise and the cleaning of circulated air.

Past experience has shown that upon projects of light occupancy per unit of floor space or room volume, whose outside exposure is considerable, the natural infiltration of outside air usually will provide ample ventilation.

Upon such projects the additional expense, complication, unsightliness and potential trouble involved in cutting of openings and installing fresh air ducts and louvers, may be avoided without danger to satisfactory performance or to health and comfort.

However, if desired, a proportion

(*Concluded on Page 20, Column 5*)

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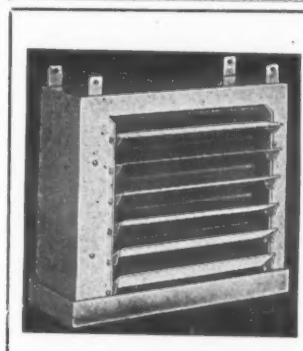

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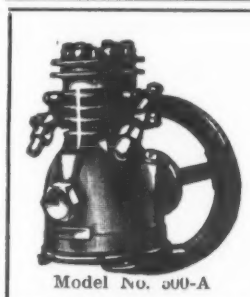

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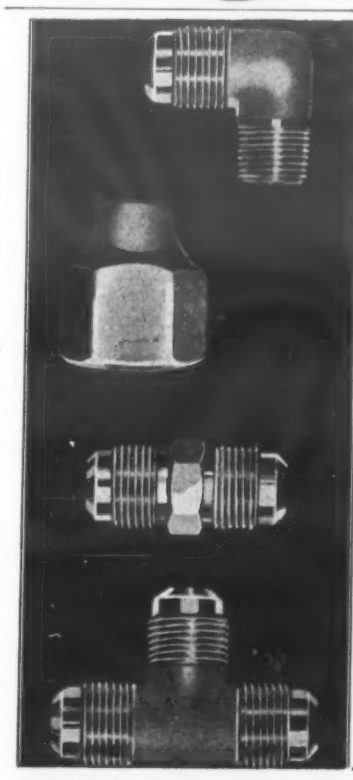

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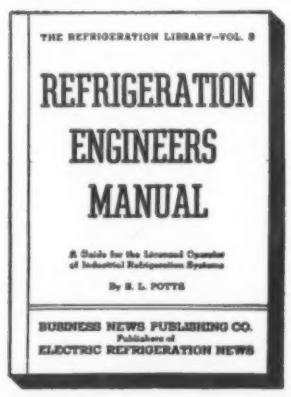

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